



INSPIRED BY
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User manual

Interroll Carton Wheel Flow CF2020

Manufacturer

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Manual available for download from the following address:

http://www.interroll.com/en/downloads/dynamic_storage/ds_user_manual/

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About this manual

Remarks concerning the use of this manual

- Manual contents** This manual provides remarks and important information about the various operating phases of the Carton Wheel Flow:
- Transport, assembly, and start-up
 - Safe operation, maintenance, troubleshooting, waste disposal

- Validity of this manual** This manual describes the Carton Wheel Flow as it is delivered by Interroll.



For systems involving non-standard containers or contents, specific recommendations, specific operating modes, and all the contractual documents are supplied in addition to this manual.

This manual is an integral part of the product

- To ensure safe, reliable operation and to benefit from the warranty, before using the Carton Wheel Flow you must follow the recommendations in this manual, *"Assembly and installation"*, page 12, and the data in the order confirmation.
- Keep this manual near the Carton Wheel Flow.
- Give this manual to any operator or subsequent user of the Carton Wheel Flow.
- Interroll shall not be held responsible for damages or failures which may result from ignoring the recommendations in this manual.
- Contact Interroll Customer Service if you have any questions after reading this manual. The last page lists the details of the person to contact in your country.

Warnings in this manual


The warnings in this manual concern dangers which may arise while using the Carton Wheel Flow. For relevant warnings, see "Safety", page 6 and the warnings at the beginning of each chapter.

There are three categories of danger, indicated by the following keywords:

- Danger
- Warning
- Caution


Keyword	Meaning
Danger	Indicates a hazardous situation which, if not avoided, may result in death or serious injury.
Warning	Indicates a hazardous situation which, if not avoided, may result in death or serious injury.
Caution	Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

Structure of warnings



Danger

Nature and source of the hazard
Possible consequences of non-observance
► Information about how to avoid the hazard.



Notice

This symbol identifies possible material damages
► Information about how to avoid damage.

Additional symbols



This symbol displays safety instructions.



This symbol marks useful and important information.

- This symbol marks the steps that have to be carried out.

Safety

General safety instructions

The Carton Wheel Flow is designed according to the technical state of the art. However, certain risks may still arise.

- Injury or a fatal accident to the user or a third party
- Damage caused to the Carton Wheel Flow or to other material



Disregarding the warnings in this manual may lead to serious injury.

- ▶ Always read this manual carefully and make sure you follow the safety instructions.
- ▶ Only qualified and specifically trained personnel may work with the Carton Wheel Flow.
- ▶ Always keep this manual at hand and make it accessible to all personnel.
- ▶ Always comply with the relevant local safety regulations in your company.
- ▶ Contact Interroll Customer Service if you have any questions after reading this manual. The last page lists the details of the person to contact in your country.

Intended use

The Carton Wheel Flow is reserved exclusively for industrial use in suitable environments. The installed beds are intended for dynamic (gravity-based) storage only of foreseen and previously approved isolated loads. They are reserved exclusively for storing referenced or standardized containers. Any other use is considered inappropriate.

The system configurations must be applied. They are defined in the order confirmation and in this manual. All other changes concerning the components and their location in the bed are not authorised.



Under no circumstances may the content exceed the maximum load defined by the container manufacturer or by the standard.

Unintended use

The Carton Wheel Flow may not be used to transport people.

Applications which do not comply with the intended use of the Carton Wheel Flow require prior written approval from Interroll.

Qualified personnel

Qualified personnel are persons who read and understand this manual and, taking national regulations into account, can completely execute the required work. Only trained and qualified personnel may work with the Carton Wheel Flow, taking the following into account:

- the relevant manuals and diagrams
- the warnings and safety instructions in this manual
- the system-specific regulations and requirements, see *"Assembly and installation"*, page 12
- national or local regulations and requirements for safety and accident prevention

Risks



The following list contains the various types of dangers or damage that may occur when installing or working with the Carton Wheel Flow.

Personal injury

- ▶ The equipment may be used by qualified personnel only, in any of its operating modes.
- ▶ Comply with the technical data provided in the order confirmation. Containers must have a flat, rigid bottom, capable of bearing the load. The size ratio between the base and the height must ensure proper stability of the container.
- ▶ Follow the assembly and operating instructions.
- ▶ Use suitable forklifts only.
- ▶ Check the system and perform maintenance on a regular basis.
- ▶ Make sure that no one walks or stands underneath loads, or in the loading or unloading zones of the dynamic storage bed. Take all necessary precautions to prevent the presence of personnel inside the beds.
- ▶ Make sure that the loading and unloading areas include sufficient lighting so as not to hinder handling operations.
- ▶ Check that the loading/unloading alley has sufficient lighting for the handling operations.
- ▶ Do not lean or walk on the Carton Wheel Flow components.

Rotating parts

- ▶ Wear suitable work clothes and Personal Protective Equipment (safety shoes, gloves, etc.).
- ▶ Tie up long hair or wear a cap.
- ▶ Remove jewellery such as necklaces or bracelets.
- ▶ Do not lean or walk on the wheel tracks.

Product information

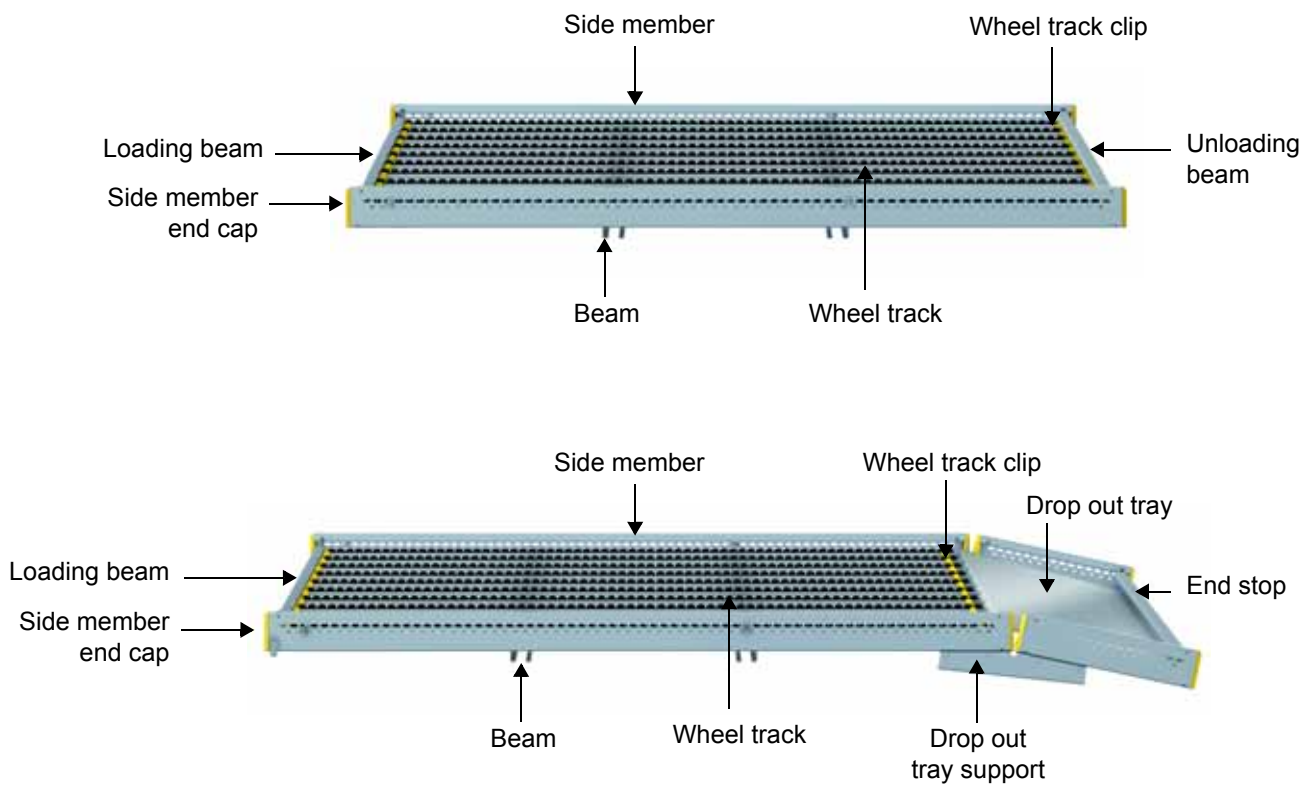
Product description

The Carton Wheel Flow offers tailored solutions for handling and preparing orders for light loads.

The product comprises wheel tracks attached to a rigid bed.

The figure below shows the main components of the Carton Wheel Flow.

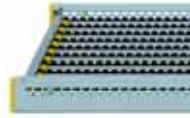
Components



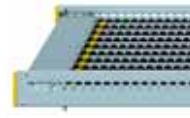
Possible configurations The Carton Wheel Flow offers several loading and unloading solutions. The figure below shows the standard possibilities offered by Interroll.

- Loading

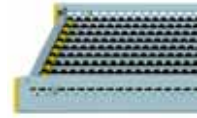
FIFO



LR Standard (Loading Regular)

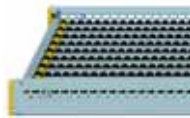


LP With loading plate



LS Loading via stacker crane

LIFO



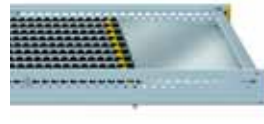
LL
Standard end stop

- Unloading

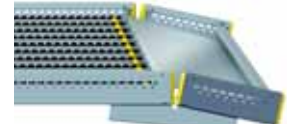
FIFO



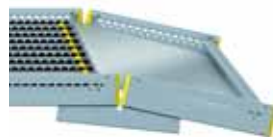
UR Standard (Unloading Regular)



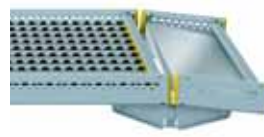
U05 Unloading with 5° drop out tray



U15-400
Unloading with 15° drop out tray for 400 mm long containers

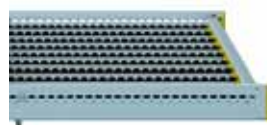


U15-600
Unloading with 15° drop out tray for 600 mm long containers



UAD With adjustable drop out tray

LIFO



UR Standard (Unloading Regular)



U05 Unloading with 5° drop out tray

Technical characteristics of the Carton Wheel Flow

Gravity-based system

Load	Maximum 200 kg / m ²
Bed slope	Recommended slope 3% to 4.5% for plastic containers 4% to 5.5% for cartons 5.5% to 7% for KLT containers <i>see "Checks before the initial start-up", page 42</i>
Forklifts	Manual unless specified in the order confirmation

Atmospheric conditions

Ambient temperature	during operation	-28°C to +40°C
	during assembly	-28°C to +40°C
	for transportation and storage	-28°C to +80°C
Relative humidity	Up to max. 90%, without condensation	
Environment	<p>The Carton Wheel Flow is not suitable for use in an environment presenting the following risks:</p> <ul style="list-style-type: none"> • Oxidation (either atmospheric or by chemical attack) • Projections • Decomposition • Vibrations • Explosions • Radioactive radiation • Electromagnetic radiation <p>Exceptions are possible: please contact Interroll.</p>	

Load contents

The contents of the loads and their containers must not:

- Oxidise
- Corrode
- Decompose
- Block the bed's components
- Pollute the steel or plastic components
- Interfere with the proper operation of any mechanism

The Carton Wheel Flow must not be used in direct contact with food products.

Transportation and storage

Transportation

- ▶ Only qualified and authorized personnel can transport the equipment.
- ▶ Use appropriate lifting equipment to transport the equipment.

Storage

- ▶ Store the equipment indoors.
- ▶ Never store the equipment outdoors, or in an environment exposed to dust or projections.
- ▶ Respect the ambient conditions, see *"Technical characteristics of the Carton Wheel Flow"*, page 10.
- ▶ Do not stack additional loads on the pallets and boxes containing the Carton Wheel Flow and its components.

Assembly and installation

Warnings concerning assembly



Warning

Risk of injury in the event of incorrect assembly

- ▶ As the Carton Wheel Flow is a subsystem of the overall system, you need to perform a risk analysis of the entire system.
- ▶ Identify the protective measures required concerning risks related to the local conditions at the site and to usage.
- ▶ Define a safety zone around the working area.
- ▶ Secure the zone and set up proper signage and appropriate protection.
- ▶ When assembling modules on the rack, refer to the safety rules concerning working at height.
- ▶ Do not lean or walk on the Carton Wheel Flow components.
- ▶ Always wear suitable Personal Protective Equipment (gloves, safety shoes, etc.) during assembly work.

Assembly rules

The dynamic storage beds are subsystems of a global system. They are delivered in accordance with the technical data indicated in the order confirmation.

The delivery of the Carton Wheel Flow comprises pre-assembled wheel tracks and accessories. These components must be assembled, installed, and positioned on a rack.



Any changes to the components or the bed cancels Interroll's responsibility, and will be considered as unintended use of the Carton Wheel Flow.

Qualified personnel

The assembly and installation must be carried out by qualified personnel in accordance with the instructions concerning assembly and installation, and with the safety instructions.

The manager of the team responsible for assembling the beds must be technically competent and trained in the following:

- The products and their use.
- The dangers inherent in the assembly of heavy or cumbersome components in high places.
- The risks related to incorrect assembly.
- The adjustments required for correct operation of the beds.



Interroll can provide special training on the Carton Wheel Flow. We will send a quote on request.

General rules

- ▶ Check the stability of components on the containers before cutting the straps.
- ▶ Once the straps have been cut, do not move the container.
- ▶ Make sure you do not damage the components during assembly.
- ▶ The size ratio between the base and the height must ensure proper stability of the container.
- ▶ Contact Interroll before attaching or hanging any equipment (such as sprinklers) in the area surrounding the dynamic storage (except for label holders or pick to light guides).
- ▶ The recommended tightening torque is between 23 and 28 Nm.
- ▶ Clean up the work site after installing. Do not leave any components or tools in the vicinity of the system.
- ▶ Leave a minimum gap of 25 mm between two containers or between the container and the frame upright.
- ▶ When using a full length guide or an entry guide, leave at least 7.5 mm between the container and the guide.



Adjusting the slope:

- ▶ 3% to 4.5% for plastic containers/ 4% to 5.5% for cartons / 5.5% to 7% for KLT containers
- ▶ Perform the following tests with the lightest and heaviest loads.

First, assemble a bed of each type and perform the following functional tests before assembling the rest of the system.

- ▶ Place the load on the loading side of the bed.
- ▶ Check that the load does not deviate off its axis as it descends.
- ▶ When it reaches the end stop, for both manual and automatic loading:
 - The contents must remain inside the container
 - The container must come to a stop without damaging the contents
 - The impact must be acceptable: it must not be abrupt and must not damage the container. Please use brake clips or adjust the slope of the beds, if necessary.
- ▶ Check that the container against the stop can be removed while other containers are in accumulation in the same bed.



- ▶ Leave a minimum free space above the container along the entire length of the lane.
 - plastic containers: 30 mm
 - cartons: 50 mm

All the components required to assemble the bed are described in the bed drawing provided upon delivery. See the example below.

Customer	
Contact	
QUOTE REF.	
Offer N°	

1	BED(S) TYPE	LR	UR
Bed Code		C 2694 A 6128 D04 A12 G A	
Load per Bed		650 kg	

N°	01
Date	01/09/2009

Connector	
Universal connectors 32mm	
Qty/bed	12

Track brake clip	
Qty/bed	0

Entry Guide	
Length	150 mm
Qty/bed	0

Back stop	
Qty/bed	0

Full Length Guide	
Length	6025 mm
Qty/bed	0

Wheel Track	
Track code	<div style="display: flex; justify-content: space-between;"> <div> <u>Start</u> R000 <u>Intermediate</u> X18 X054 <u>Loading</u> X=28mm Y=42mm Z=56mm <u>Unloading</u> X18 -000 <u>End</u> -1C <u>Wheel color</u> </div> <div> </div> </div>
Color	Black
Length	6060 mm
Qty/bed	6 6 if staggered
<div style="display: flex; justify-content: space-between;"> <div> <u>1</u> R000X18X054X18-000-1C <u>2</u> R000X18X090X18-012-1C </div> <div> <u>1</u> R000X18X071X18-000-1C <u>2</u> R000X18X072X18-026-1C </div> </div>	

Track splice plate *	

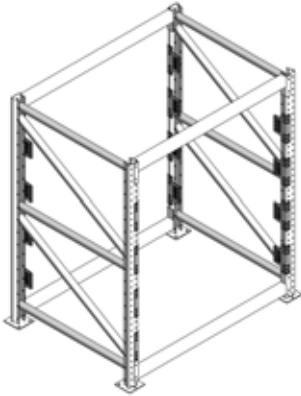
Step 1 - Connectors



Comply with the number of connectors to be attached per bed. The number appears in the bed drawing provided upon delivery.



Attach the connectors in a uniform, symmetrical manner. They must be attached at the loading and unloading sides.



03RON800000



03ECROUTEN8



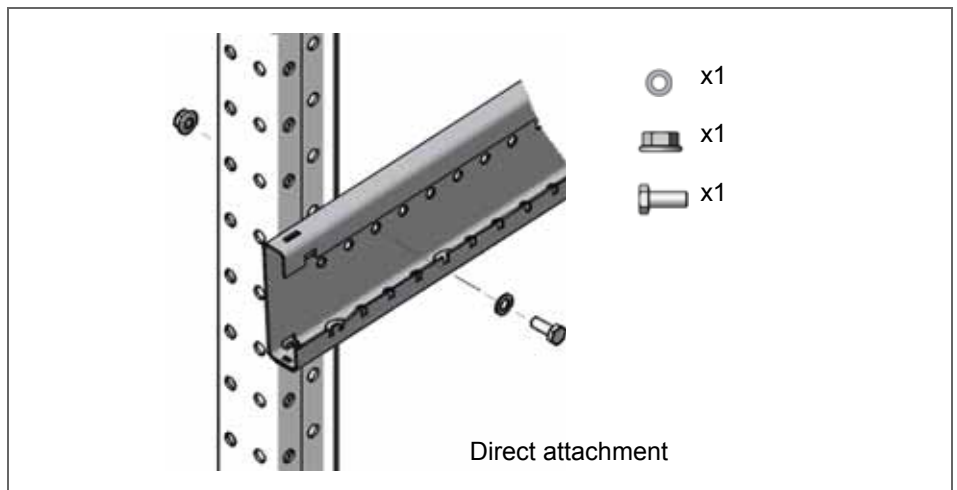
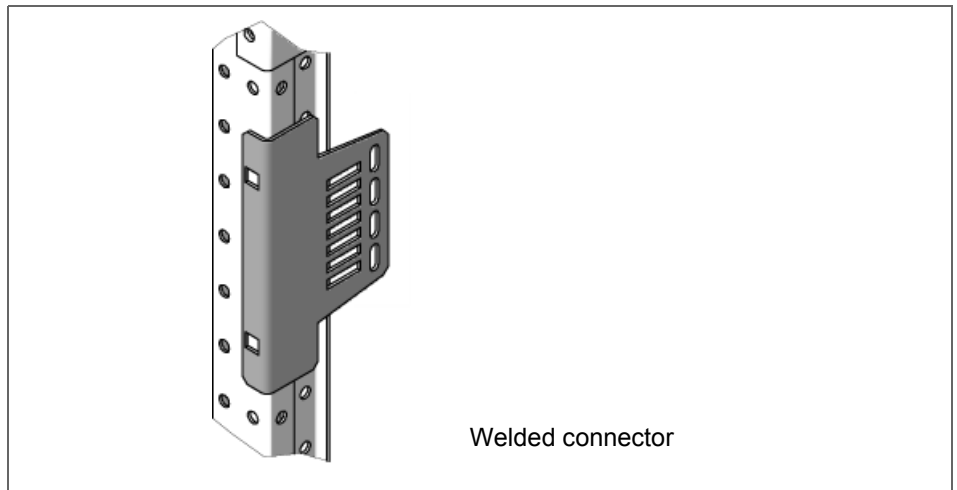
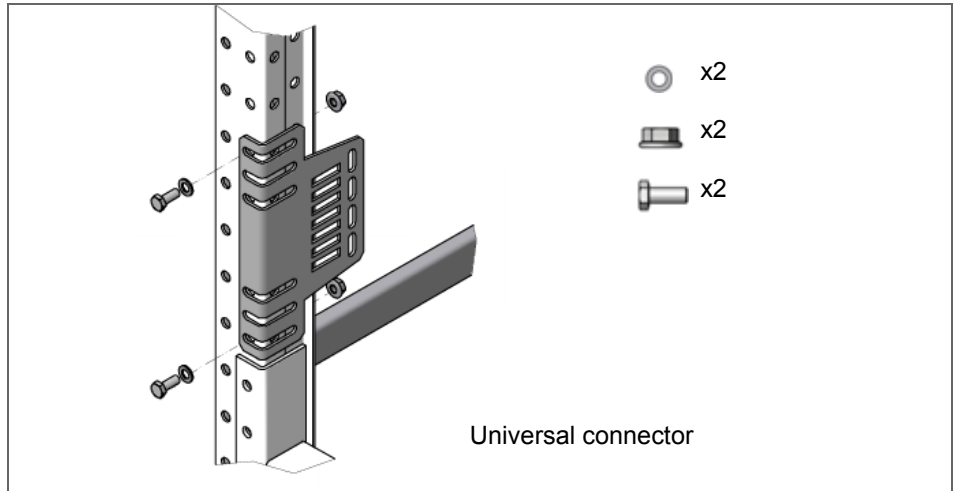
03VISH8x20



03VISTRCC8X20



03ECROUOREILLE8

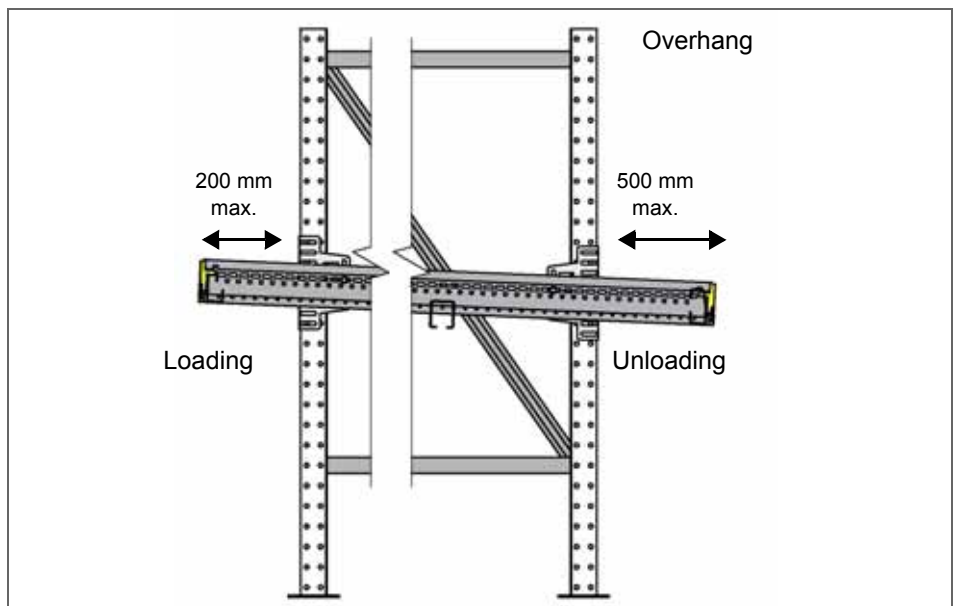
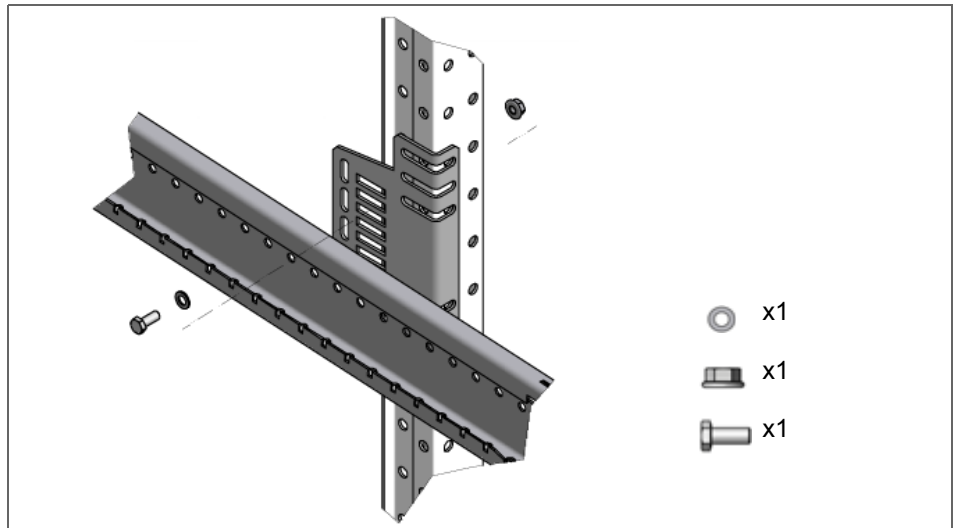
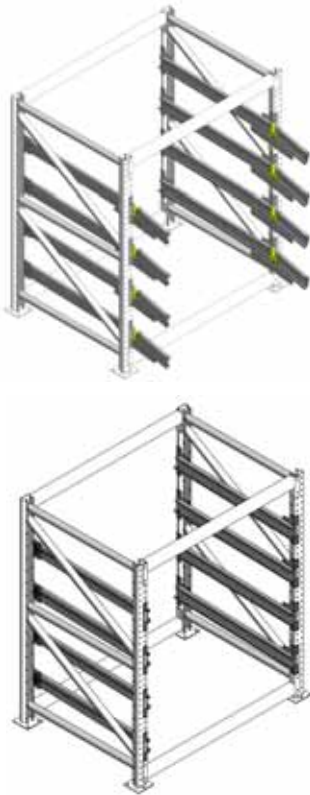


Step 2 - Side members

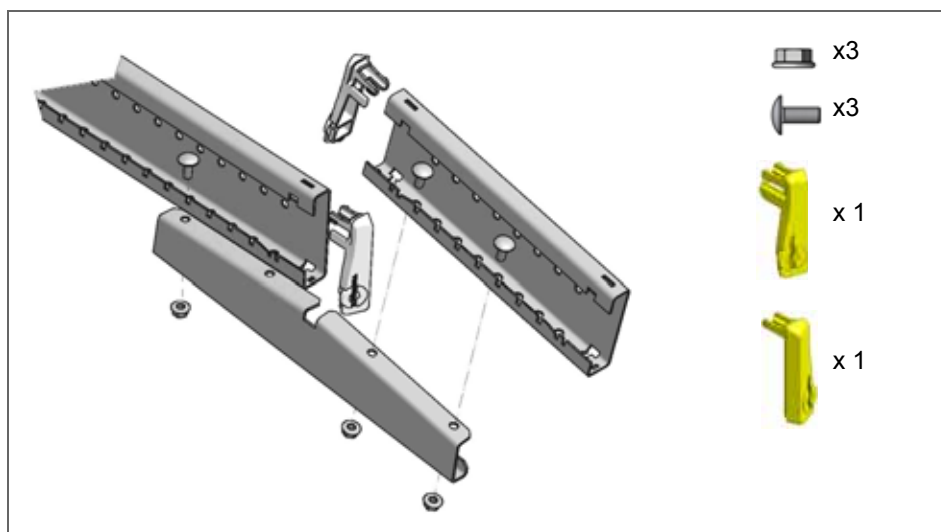


Attach the side members to all the connectors, so that the transversal components (the loading and unloading beams) are horizontal.

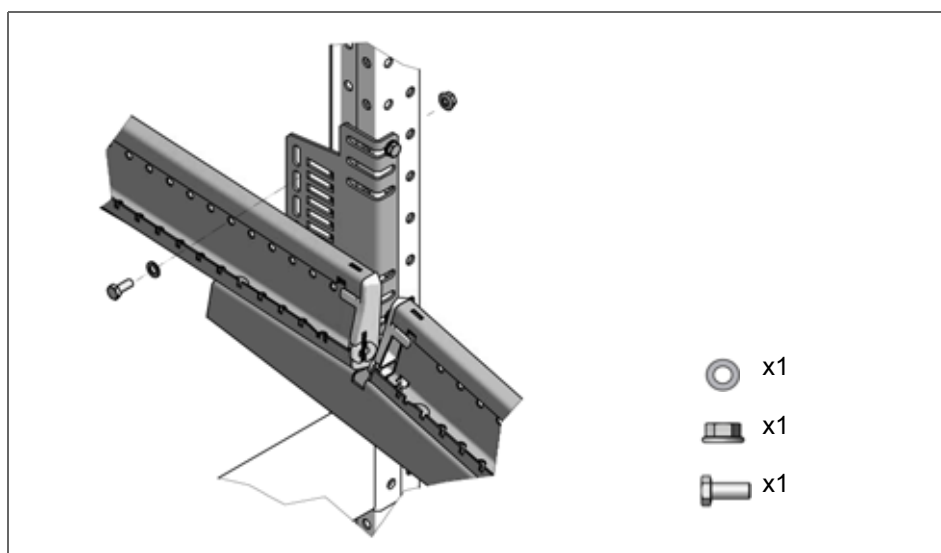
◆ Unloading UR and U05



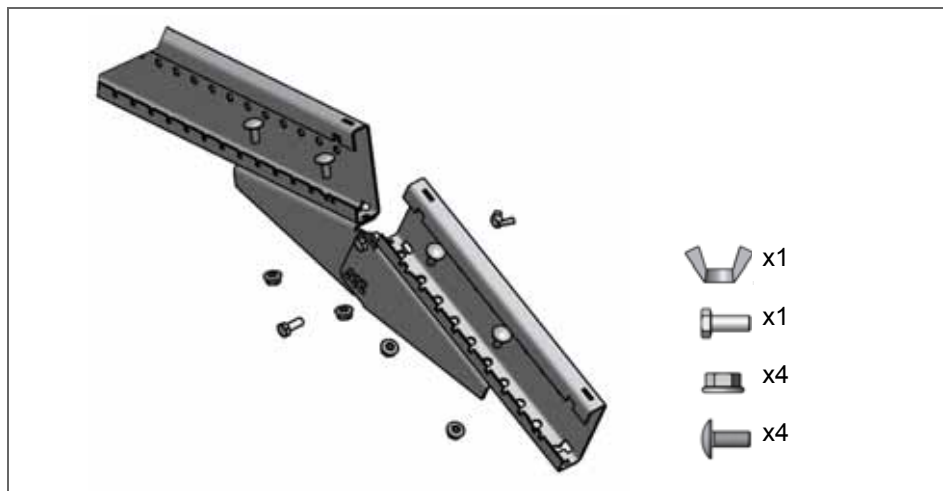
◆ U15-400 and U15-600 unloading



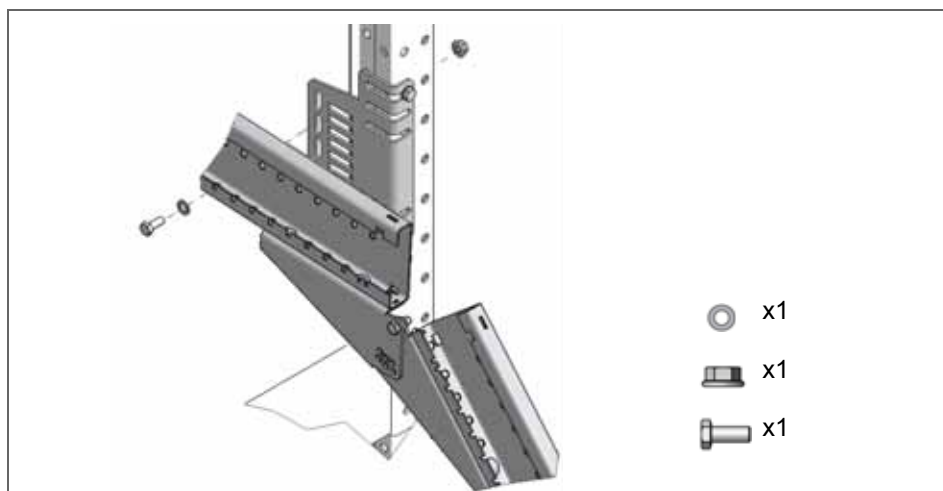
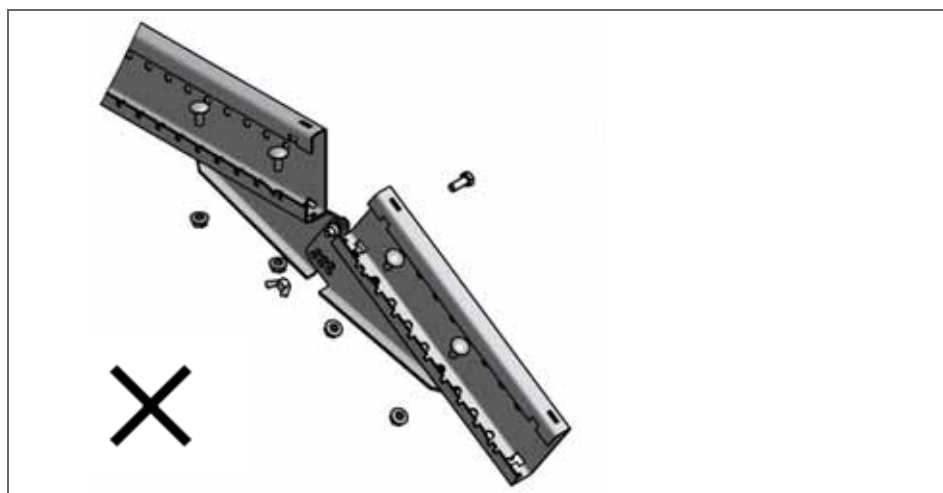
► Only install three screws for the time being.



◆ UAD unloading tray



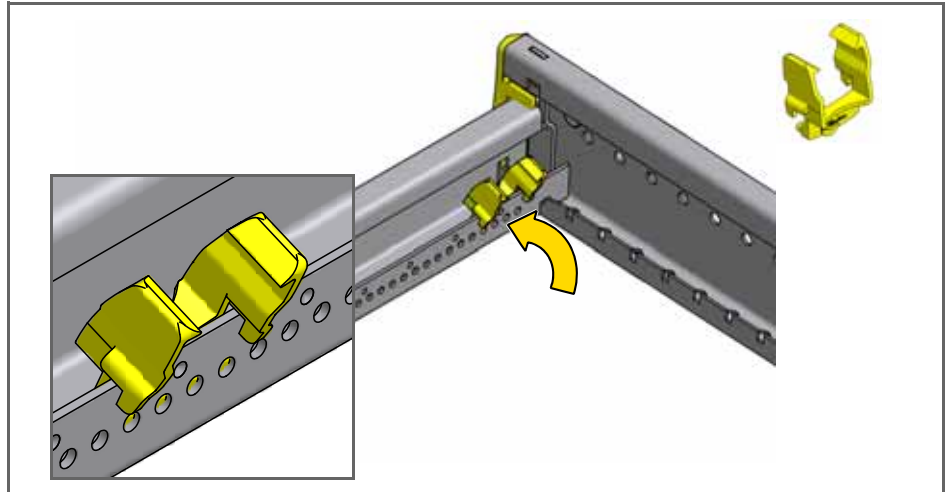
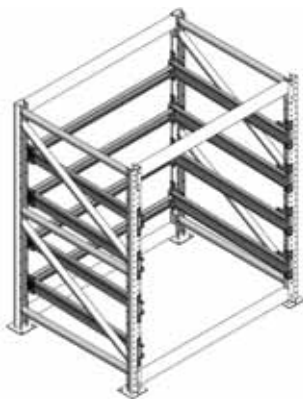
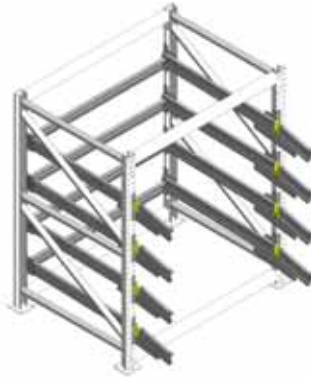
Installing the angle beam the wrong way round may cause injury.



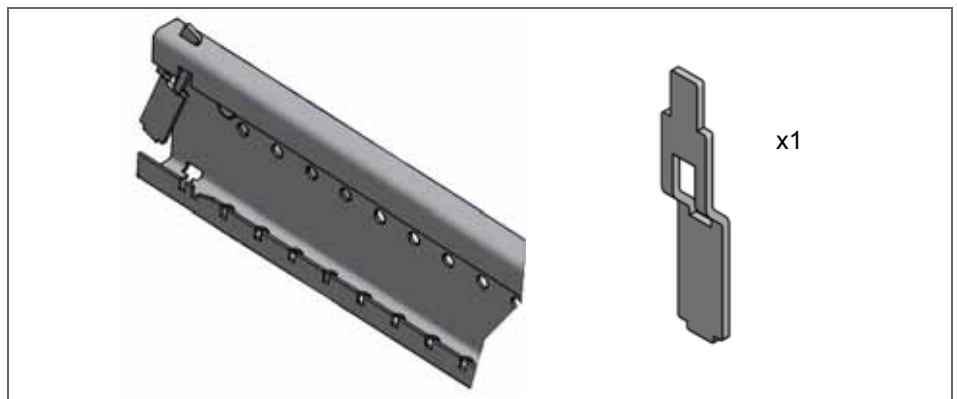
Step 3 - Loading beam



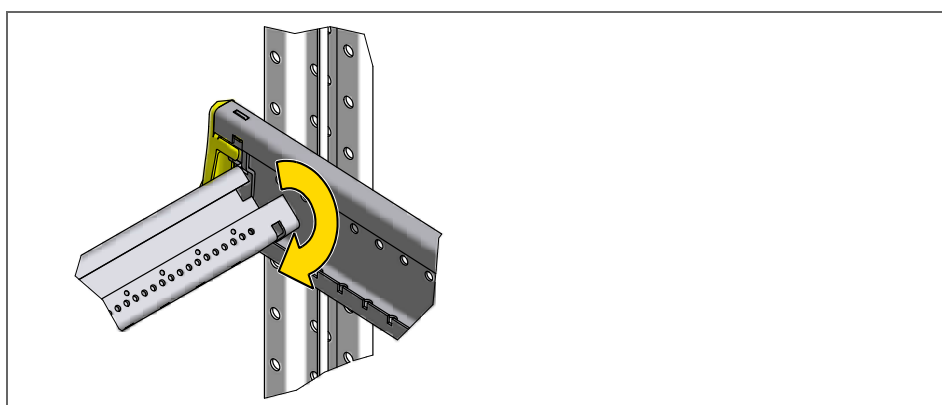
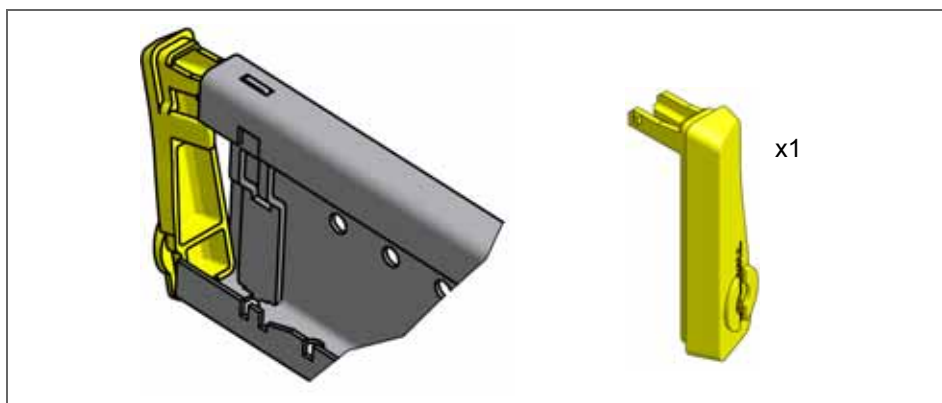
To save time, you can attach the track clips at this stage.



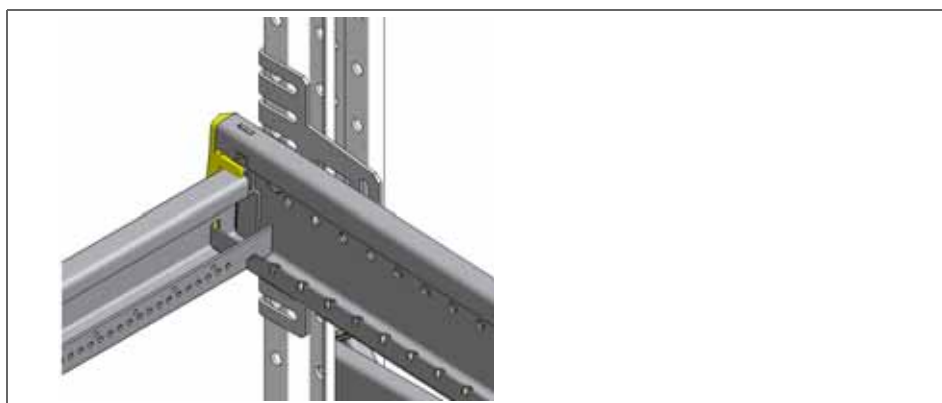
◆ LR loading



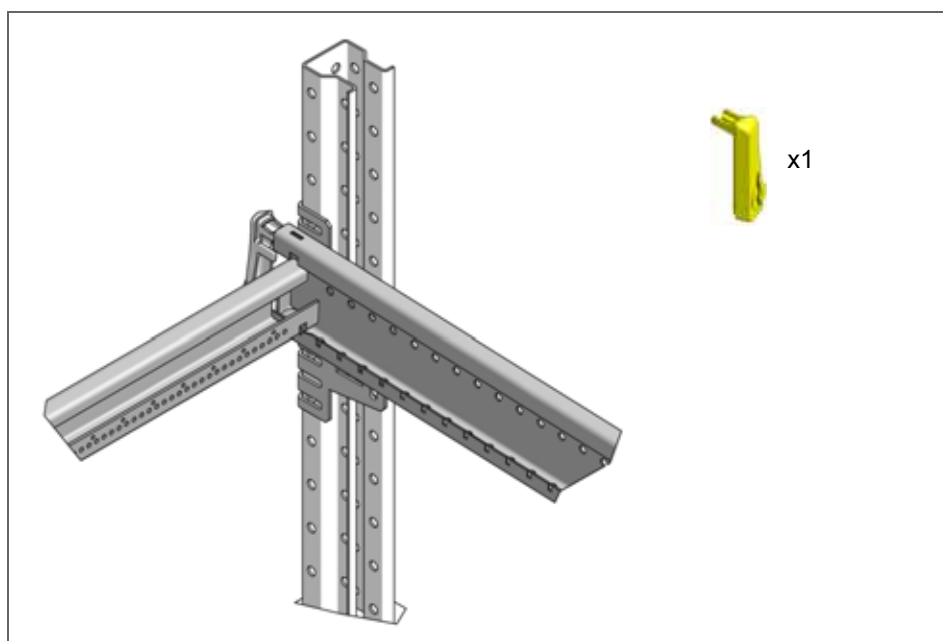
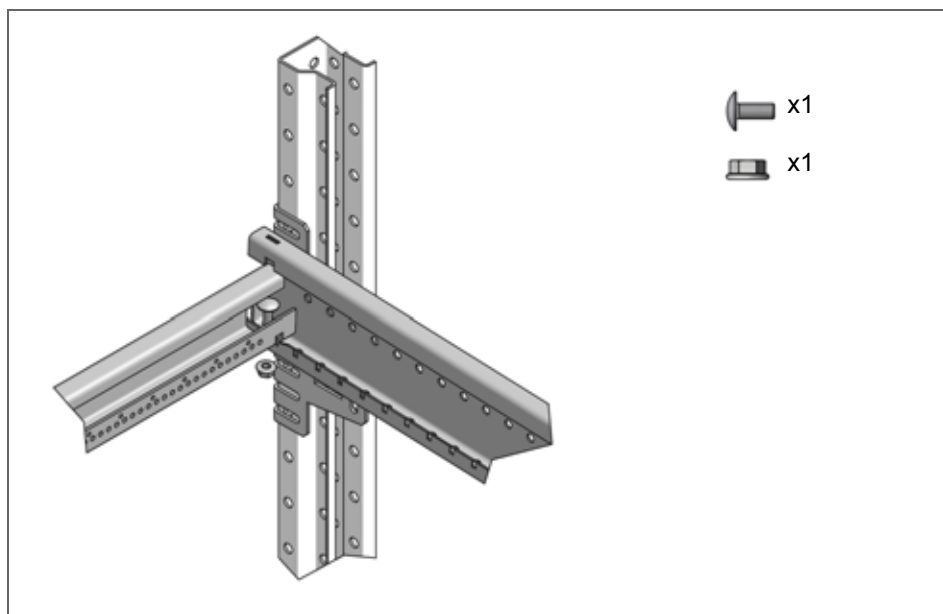
Remember the key. The key attaches the load support.



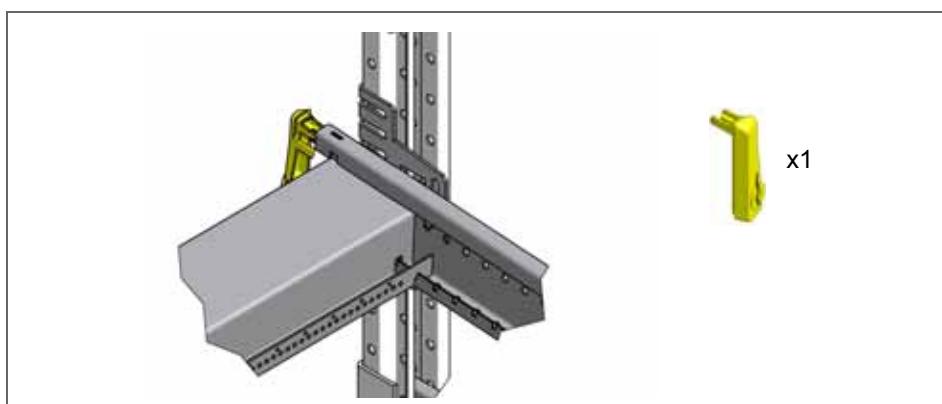
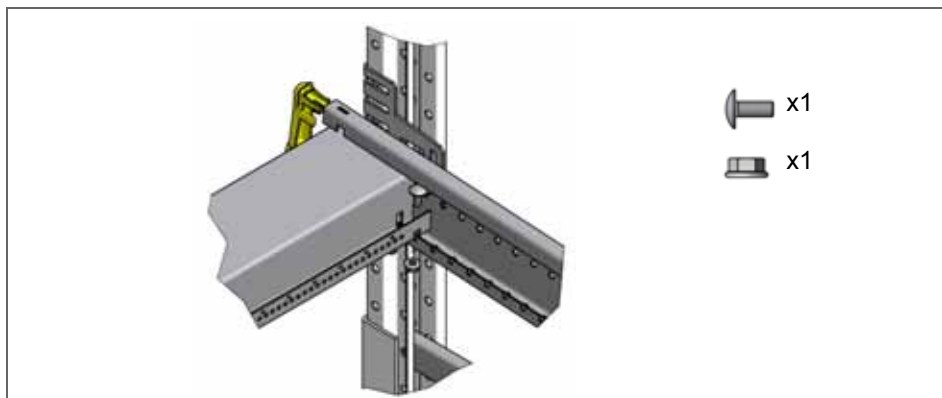
► Insert the loading beam at an angle.



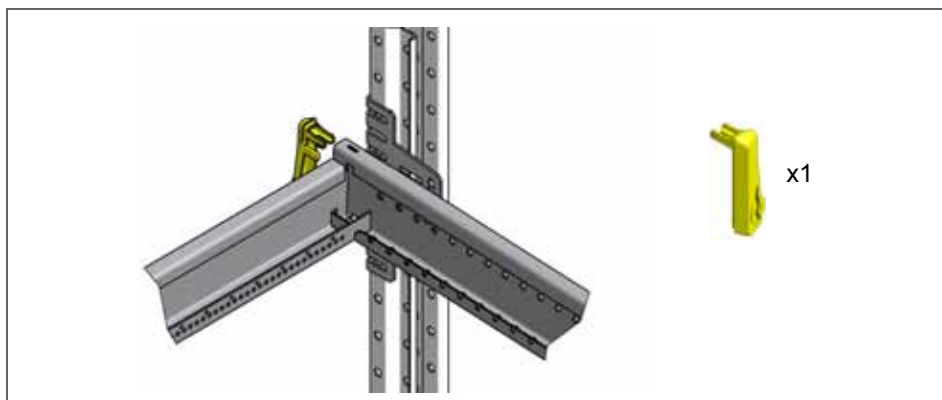
◆ LS loading tray



◆ LP loading tray



◆ Rear LL end stop

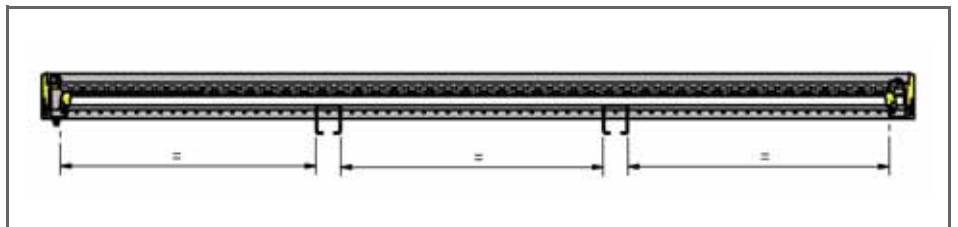
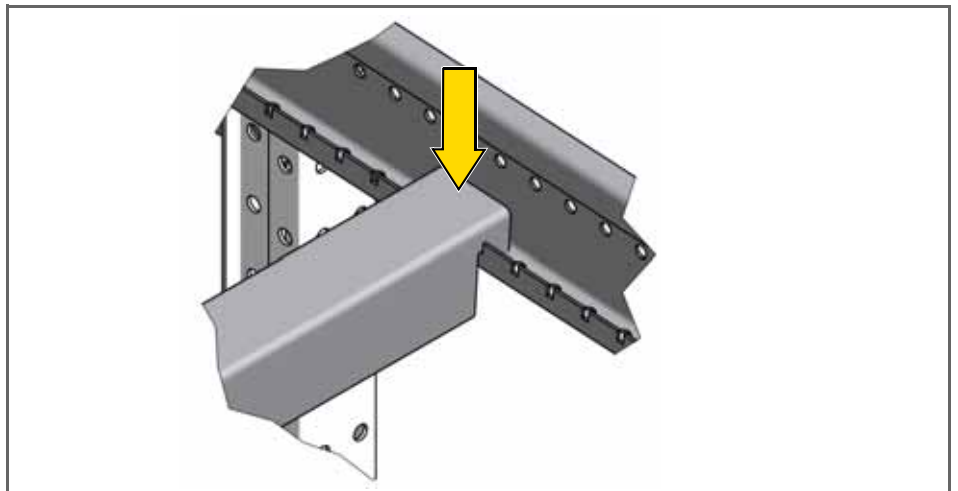
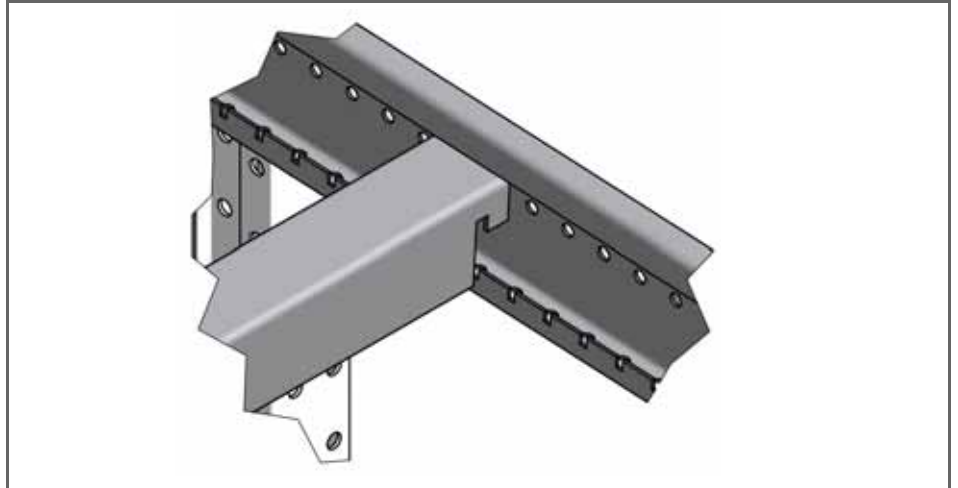
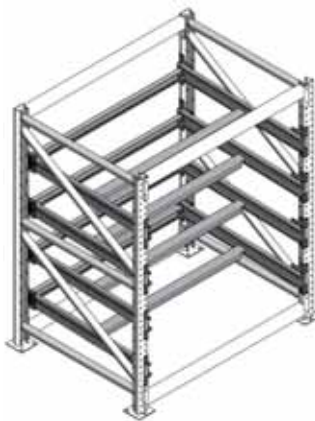
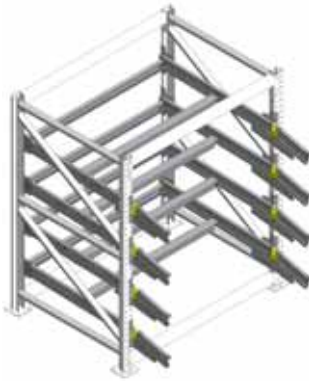


Step 4 - Intermediate beams

- ◆ Standard intermediate beams



Comply with the number and type of beams to be installed per bed. This information is provided in the bed drawing provided upon delivery.



Maintain an equal distance between each beam across the entire length of the wheel track.

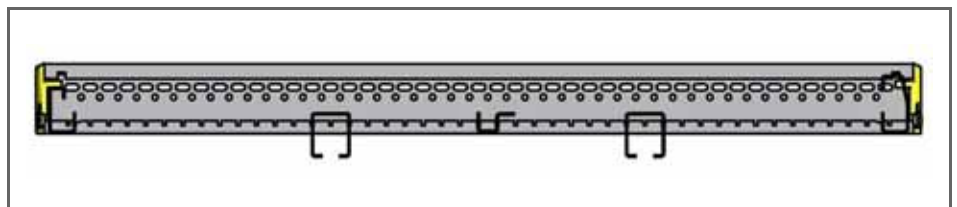
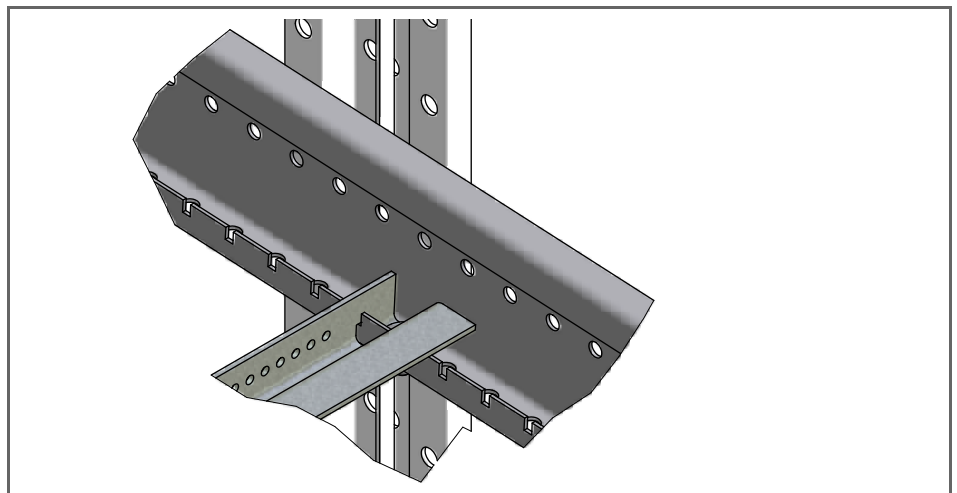
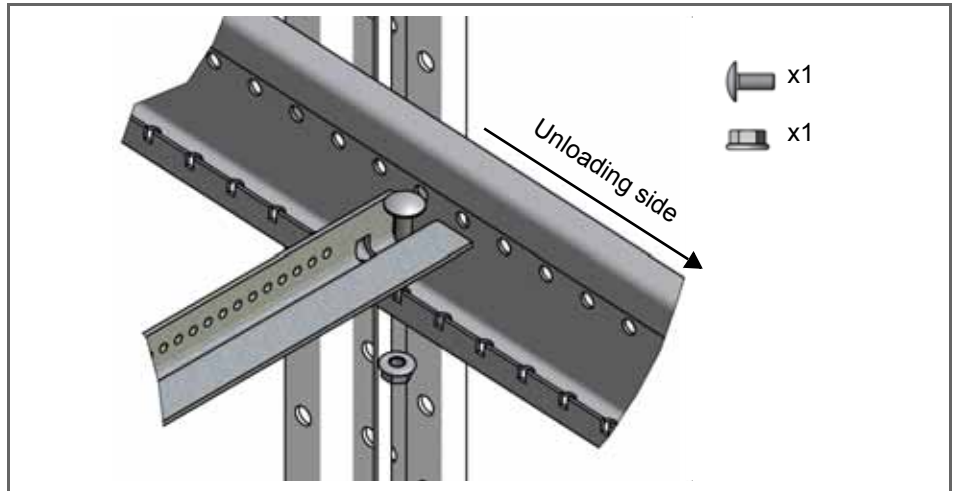
◆ Intermediate angle beam (for tracks > 4,600 mm)

This intermediate angle beam is used only as a support to align the wheel track.

1 intermediate angle beam if wheel track > 4,600 mm

2 intermediate angle beams if wheel track > 7,600 mm

3 intermediate angle beams if wheel track > 9,000 mm

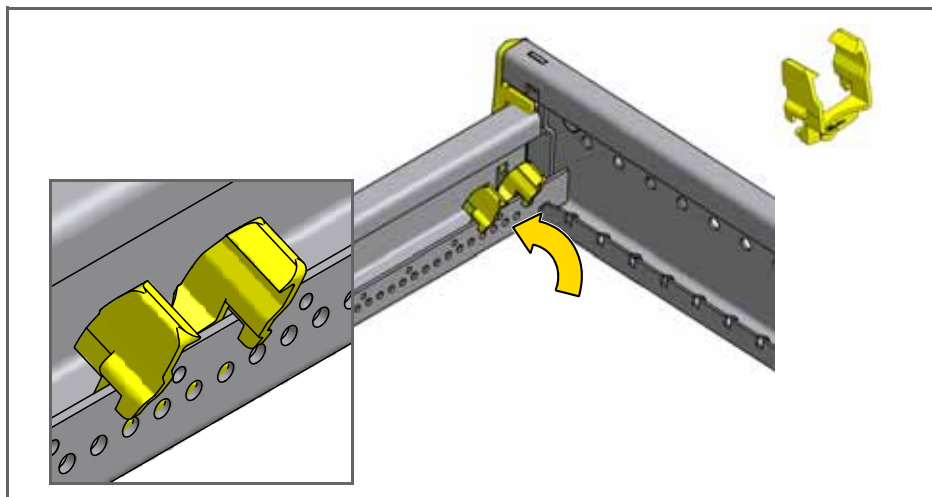
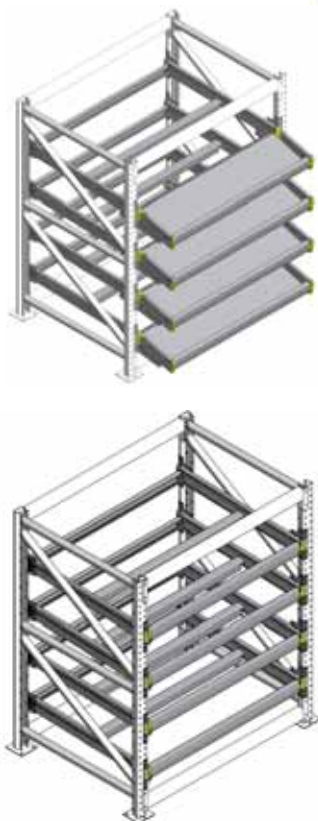


Maintain an equal distance between each intermediate angle beam across the entire length of the wheel track.

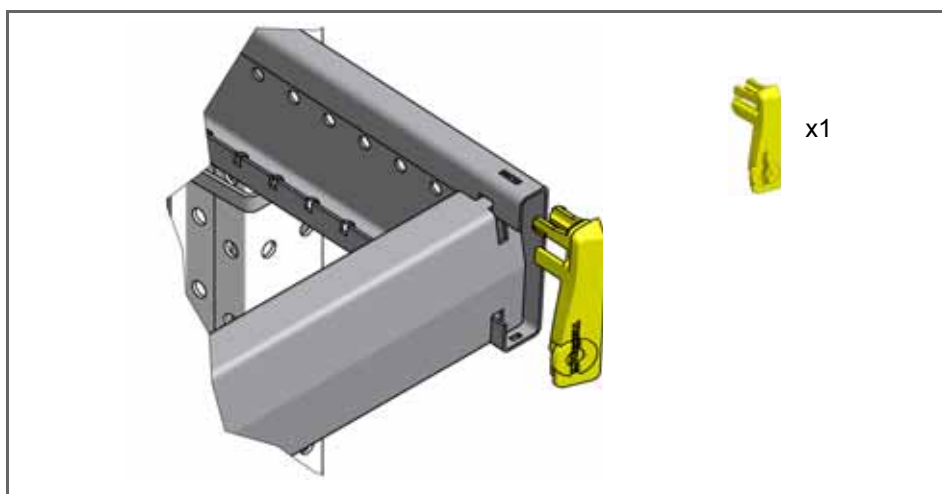
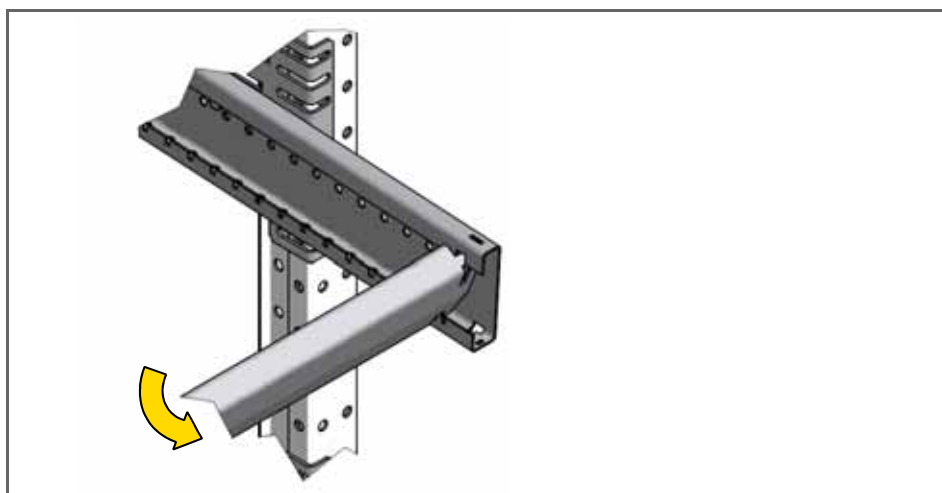
Step 5 - Unloading beam



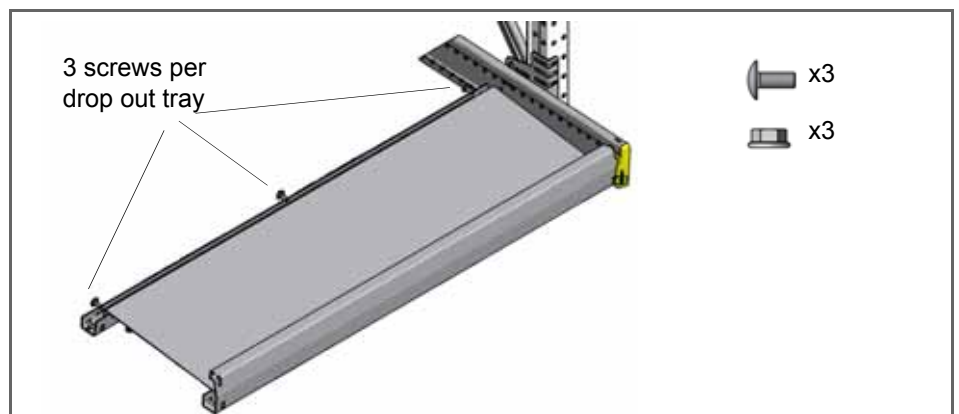
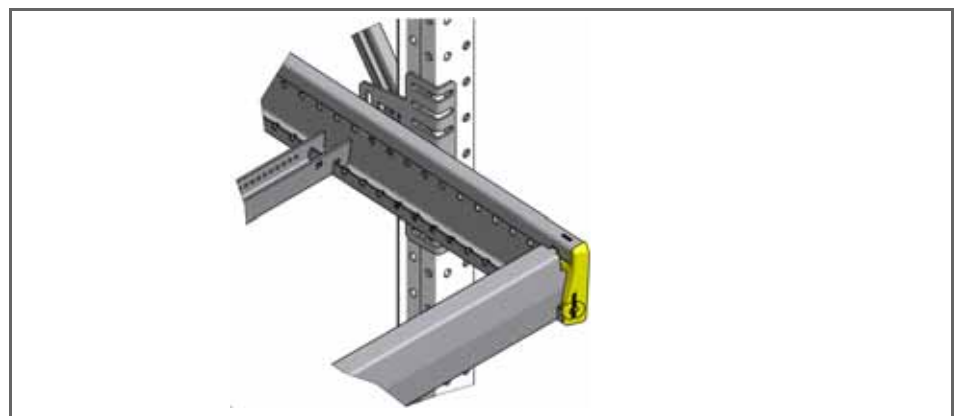
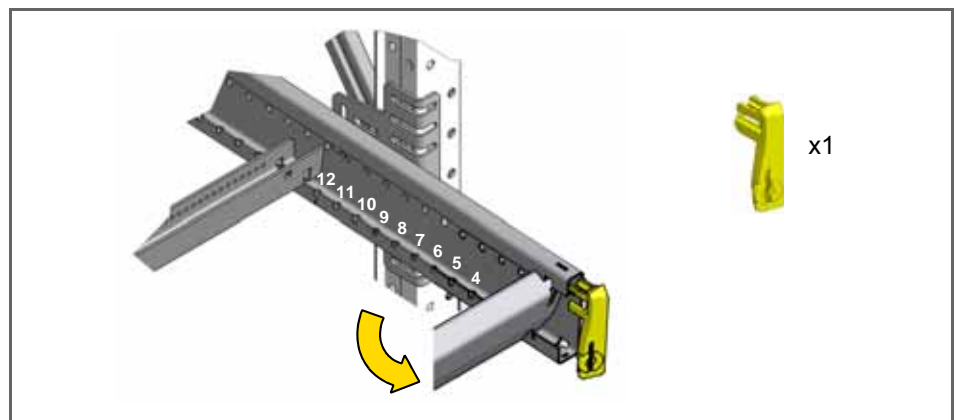
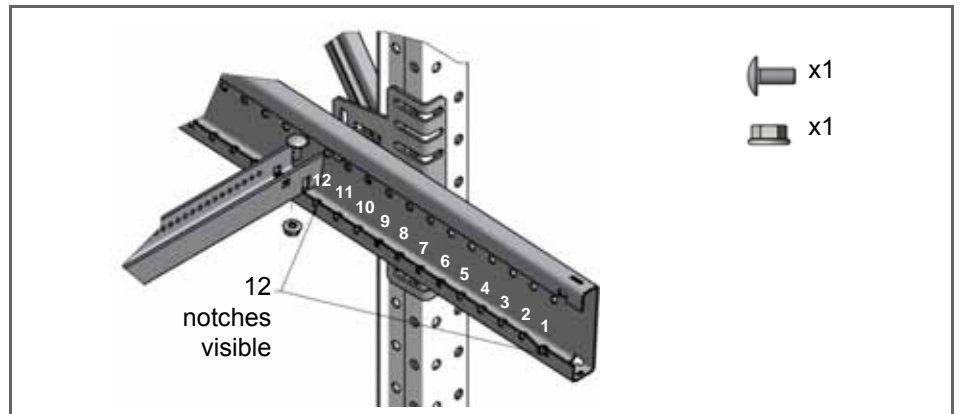
To save time, you can attach the track clips at this stage.



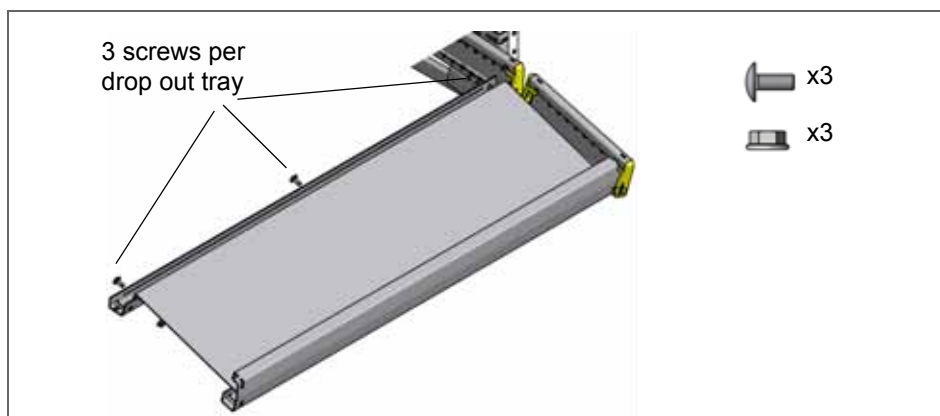
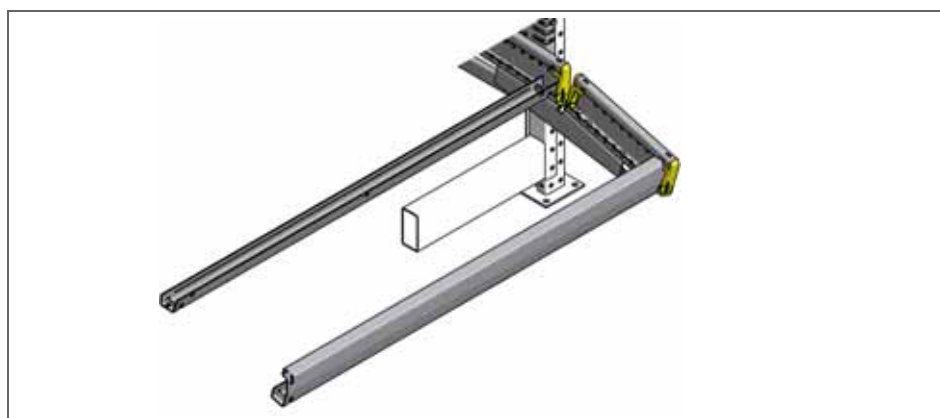
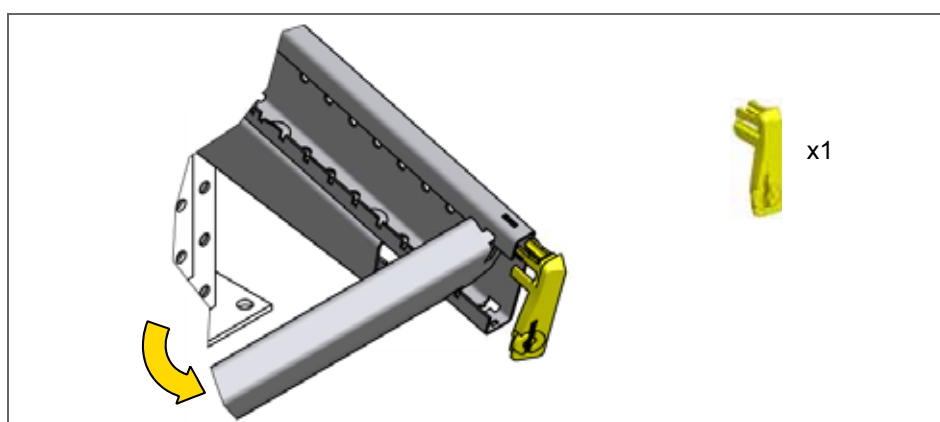
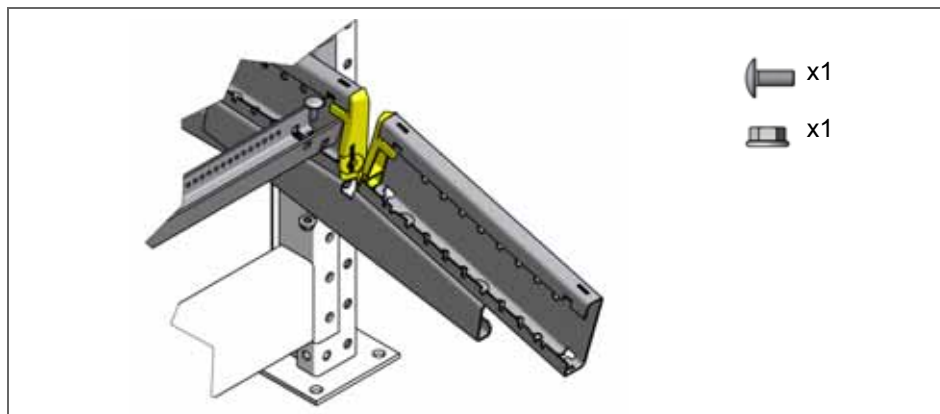
◆ UR unloading tray



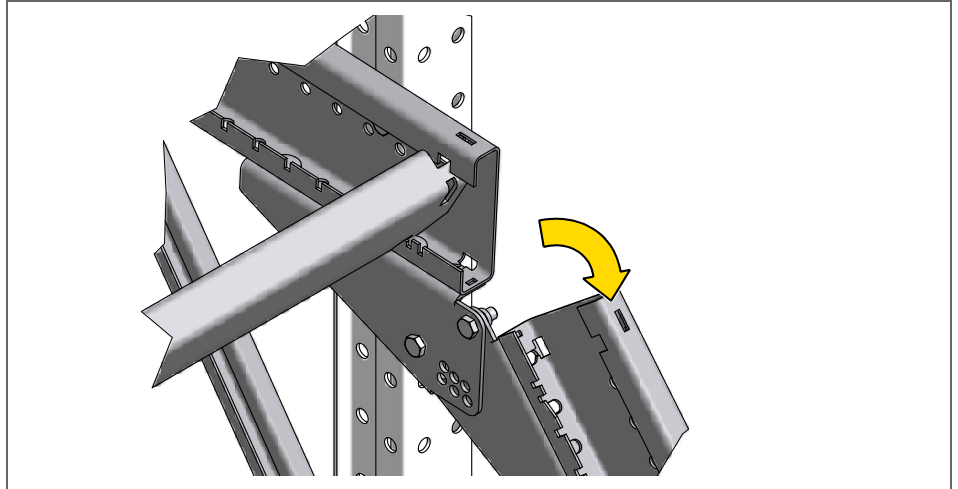
◆ UR unloading tray



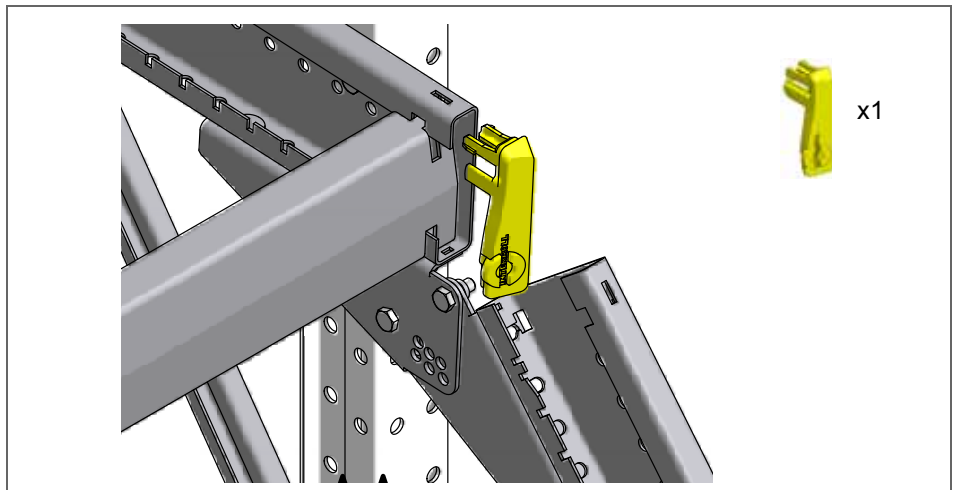
◆ U15 unloading tray



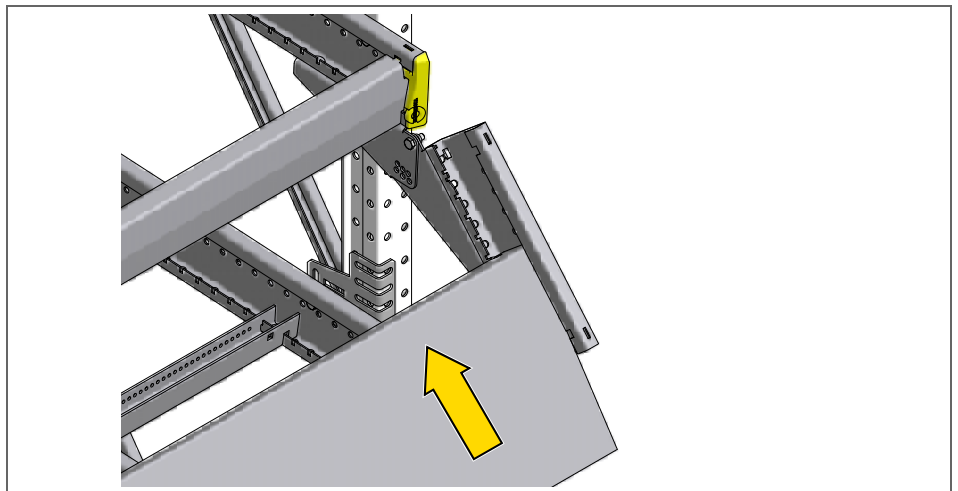
◆ UAD unloading tray

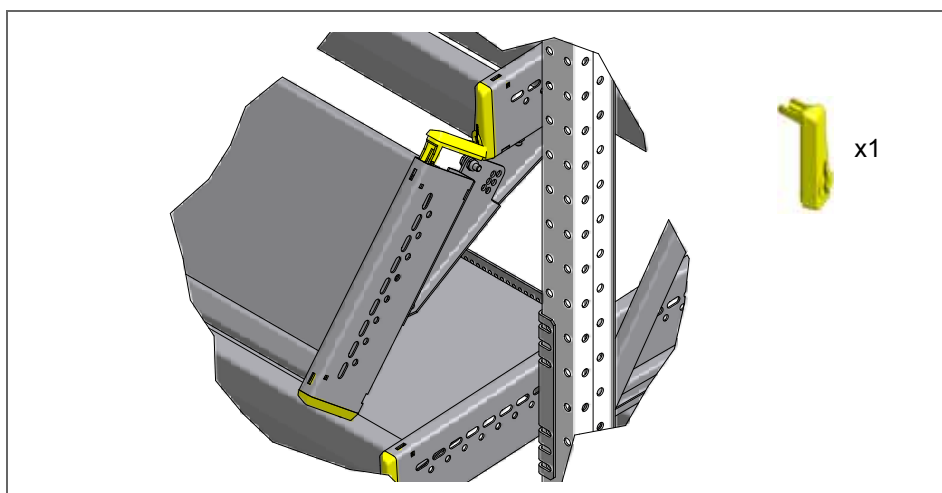
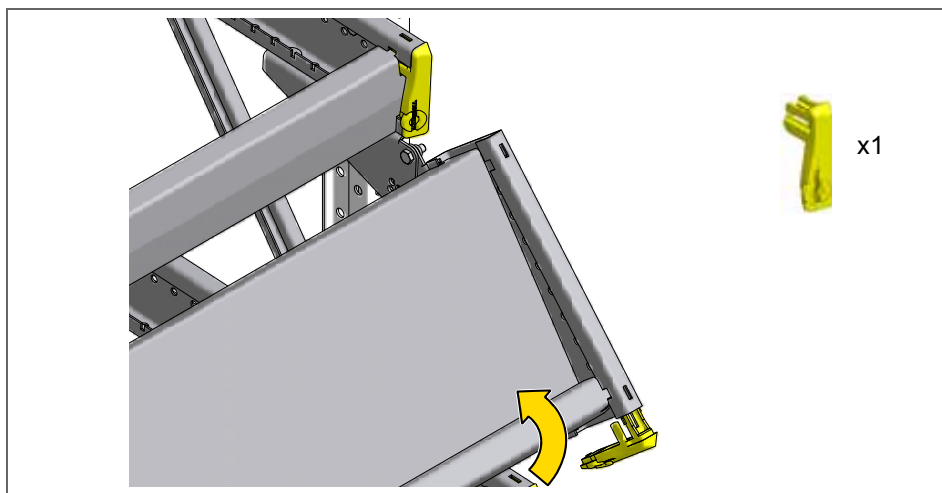


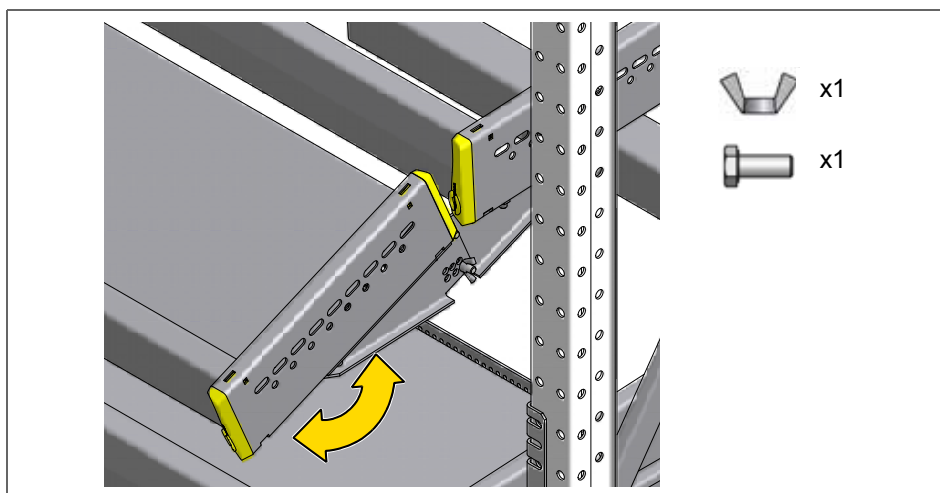
► Tilt the drop out tray as far as possible after having removed the screw and the wing nut.



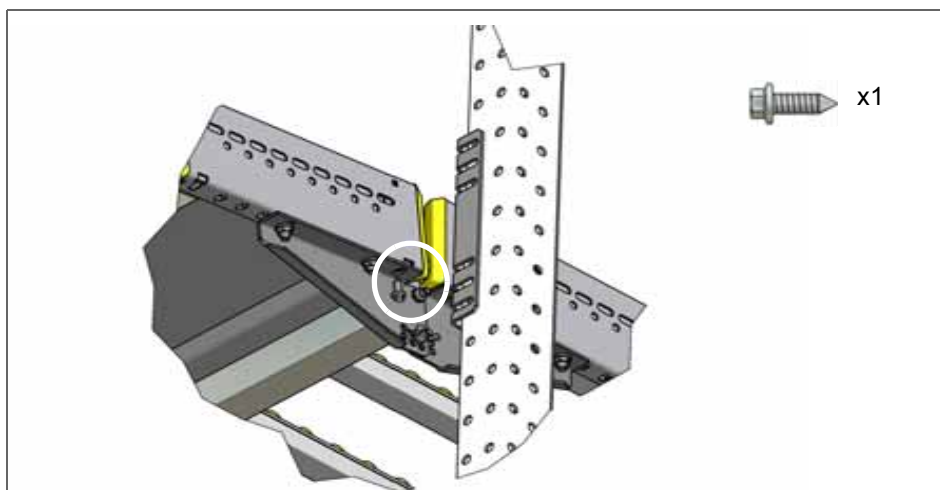
x1







► Attach the screw and the wing nut after having adjusted the tilt of the drop out tray.

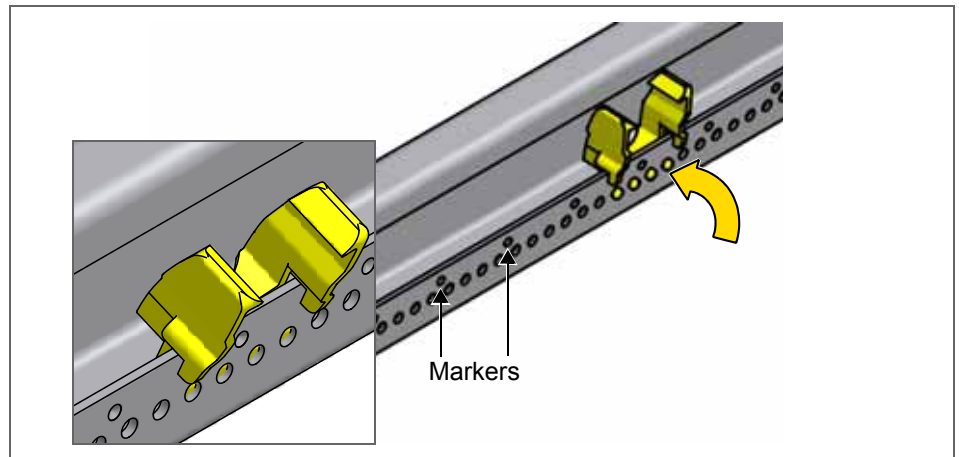
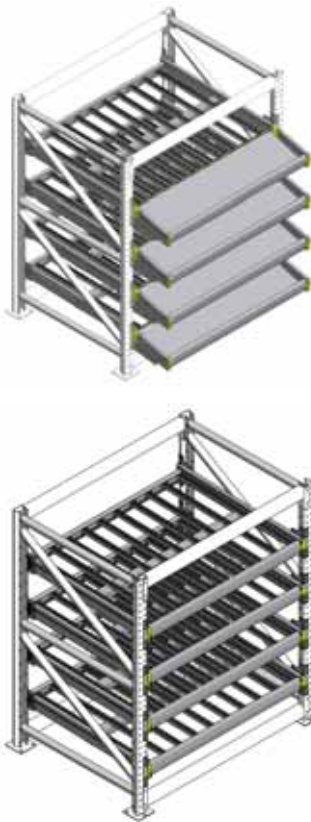


Step 6: Tracks, guides, and options

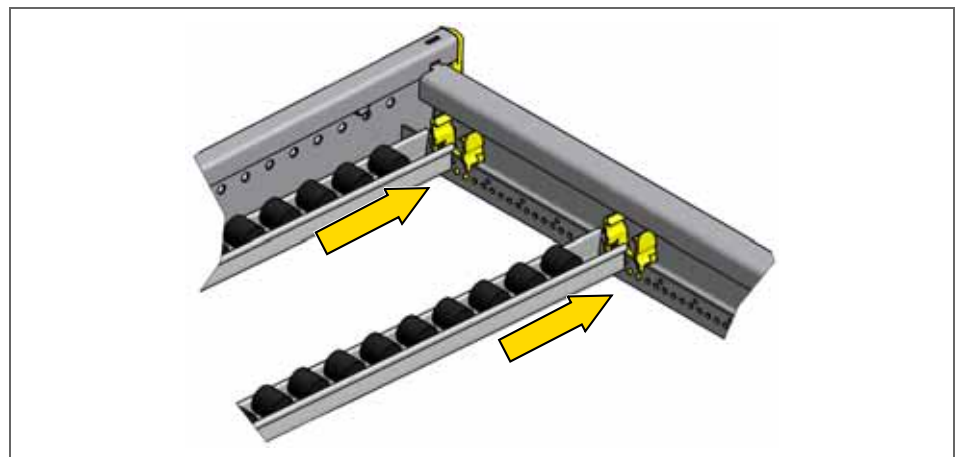


To quickly attach the track clip, prepare a model or use the markers.

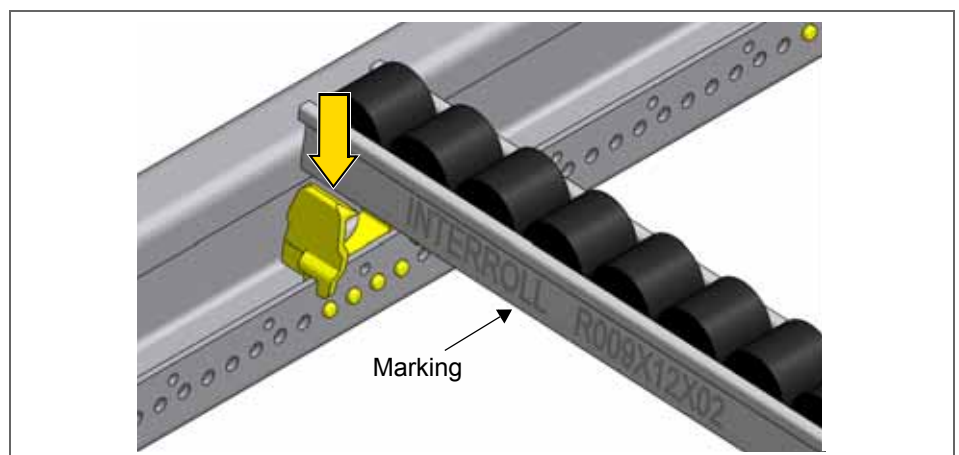
◆ Track assembly



• Unloading side



• Loading side



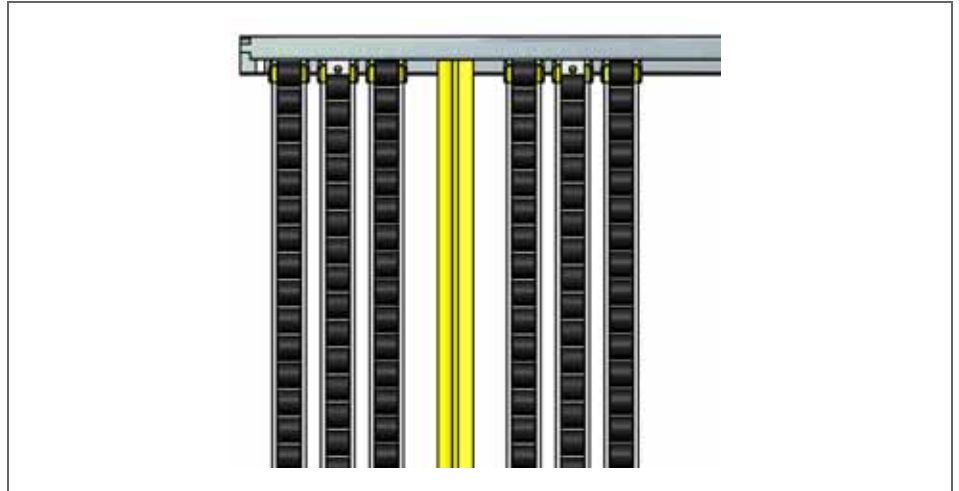
CAUTION: track marking on loading side

- Staggered tracks

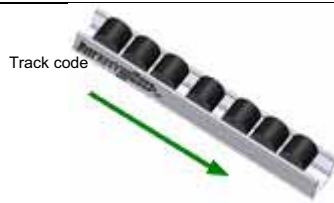


The option for staggered tracks must be specified when submitting your order.

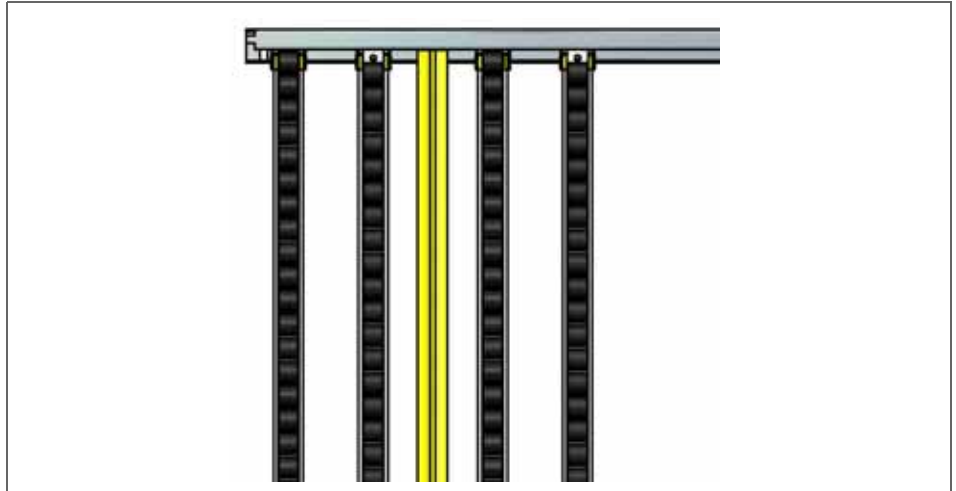
Case no. 1: 3 wheel tracks per lane



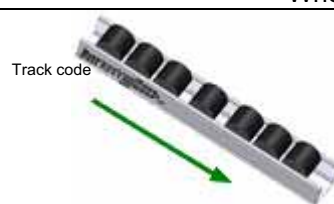
To identify the position and code of each wheel track, please refer to the bed drawing provided upon delivery (see the example below):

Wheel Track						
	<u>Start</u>	<u>Intermediate</u>		<u>End</u>		
	R016	X18	X049	X18	-052	-1C
	Loading		Unloading		Wheel color	
	X=28mm					
	Y=42mm					
	Z=56mm					
Color	Black					
Length	2448 mm					
Qty/bed	8			4 if staggered		
	R016X18X049X18-052-1C			R002X18X050X18-038-1C		

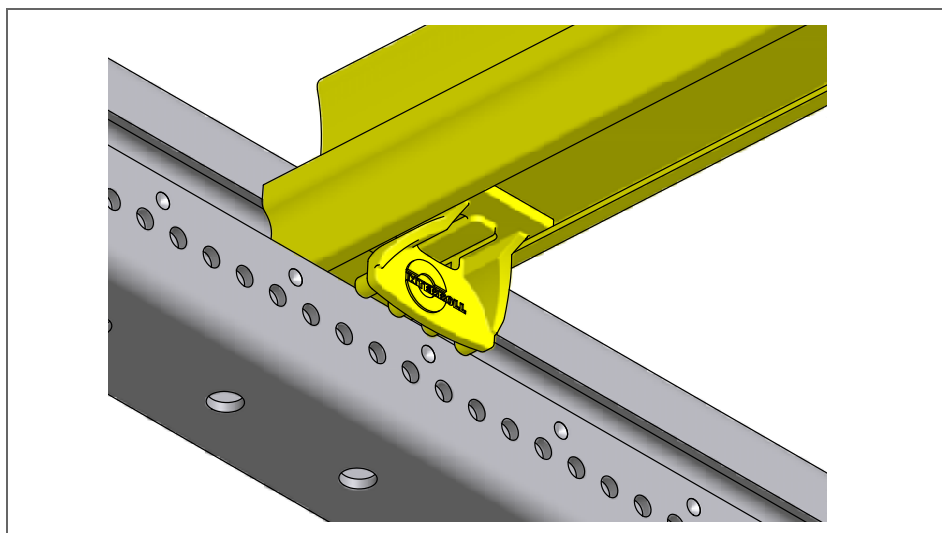
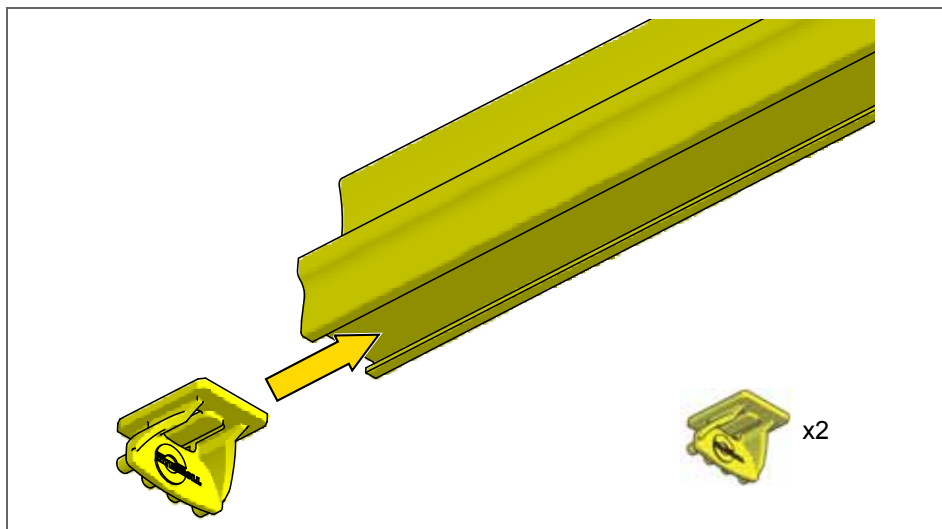
Case no. 2: 2 rails per lane



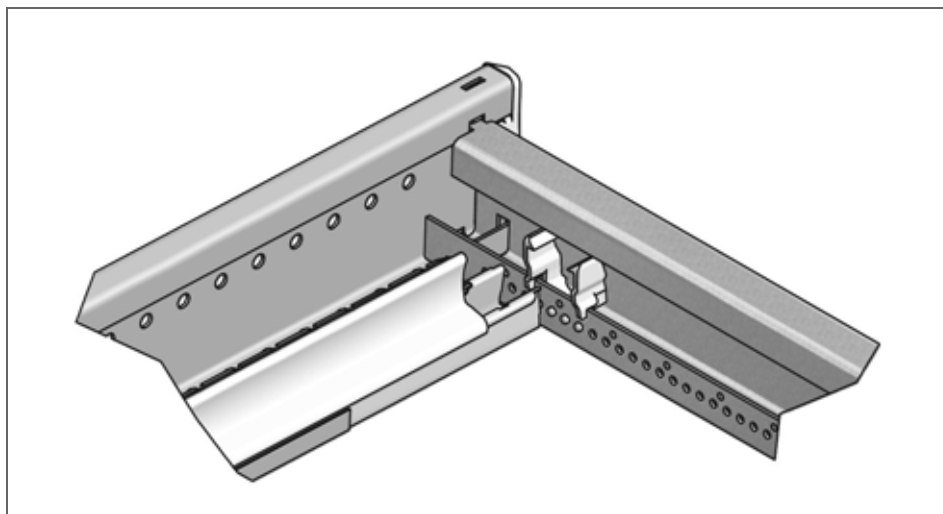
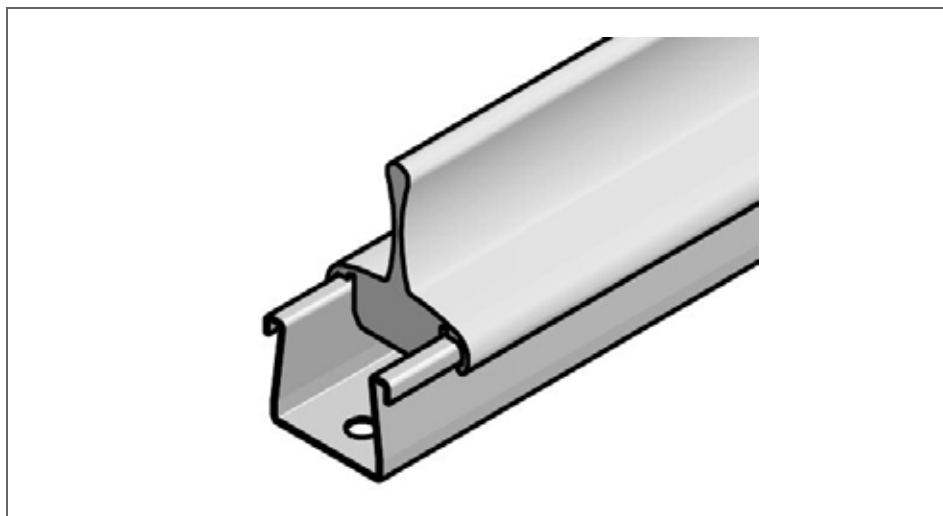
To identify the position and code of each wheel track, please refer to the bed drawing provided upon delivery (see the example below):

Wheel Track			
	Start	Intermediate	End
	R002	X18 X054 X18	-038 -1C
	Loading	Unloading	Wheel color
	X=28mm		
	Y=42mm		
	Z=56mm		
Color	Black		
Length	2560 mm		
Qty/bed	6	6 if staggered	
	R002X18X054X18-038-1C	R016X18X054X18-024-1C	

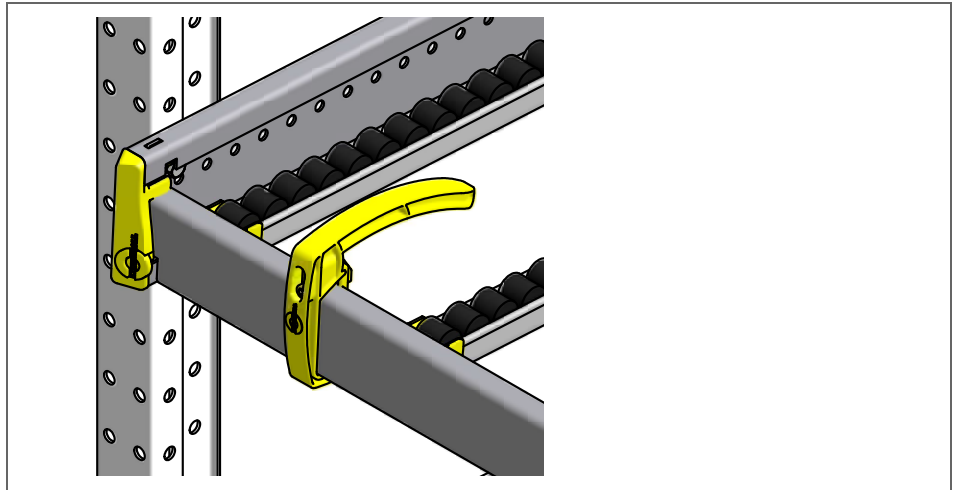
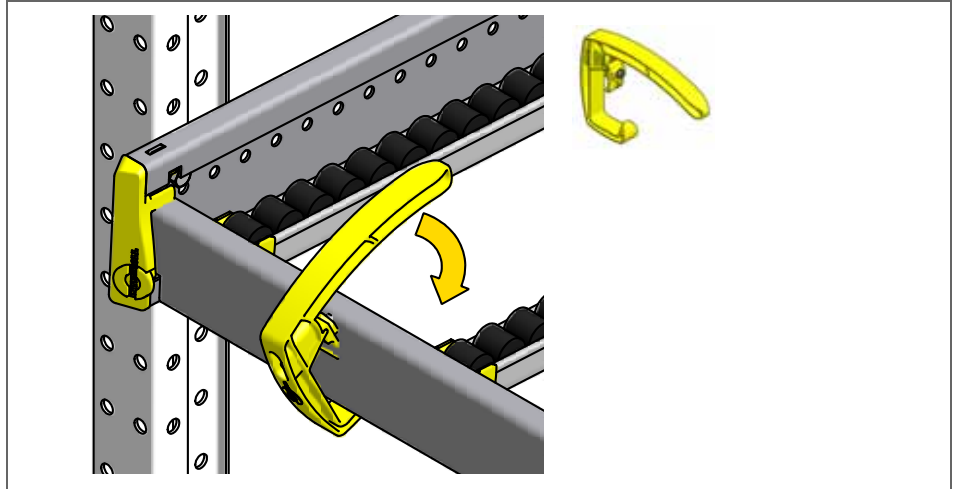
- ◆ Full length guide < 2,000 mm



- ◆ 2-piece continuous guide > 2,000 mm

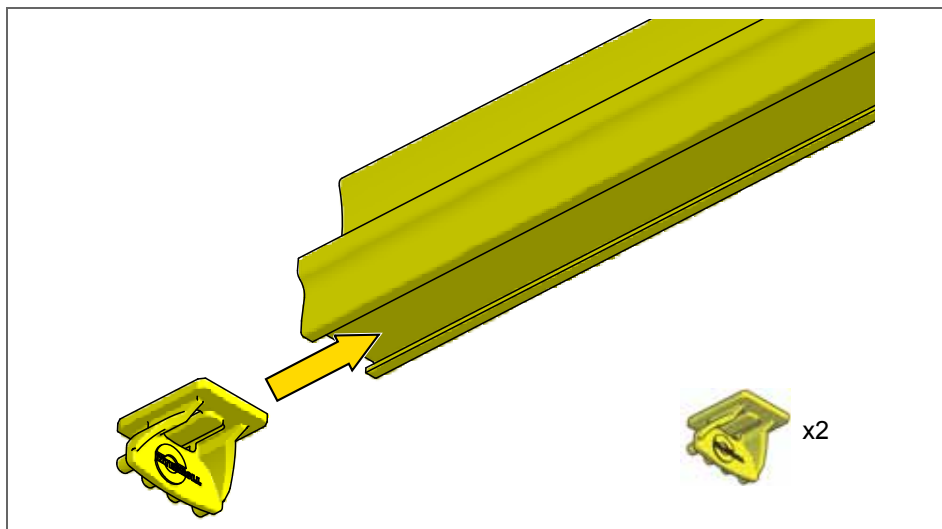


◆ Entry guide

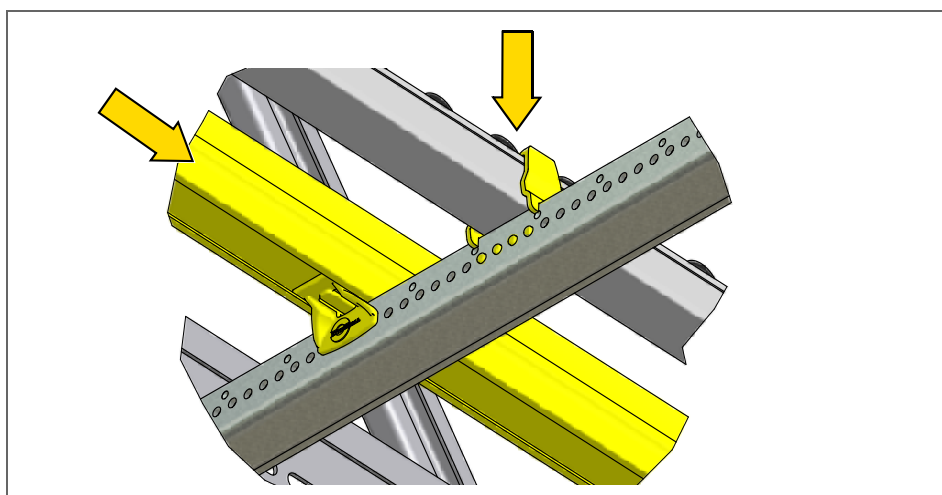
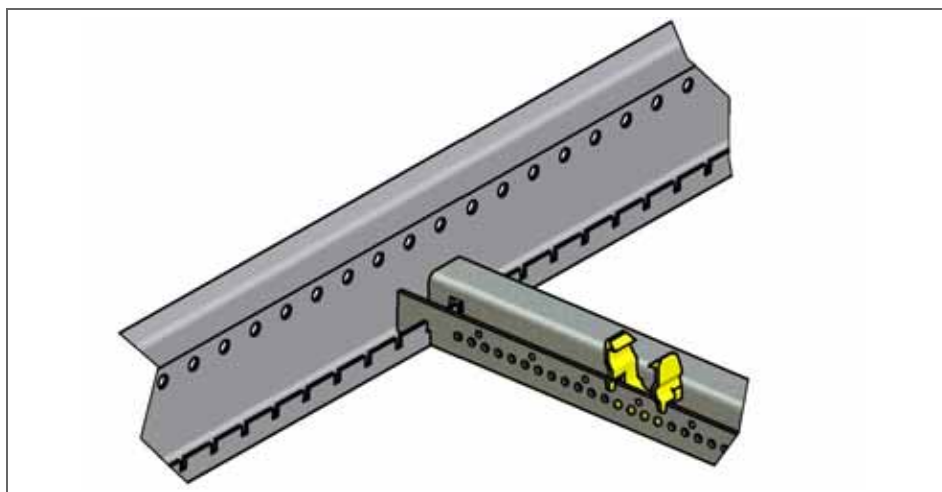


► Screw in moderately until the guide is blocked in position.

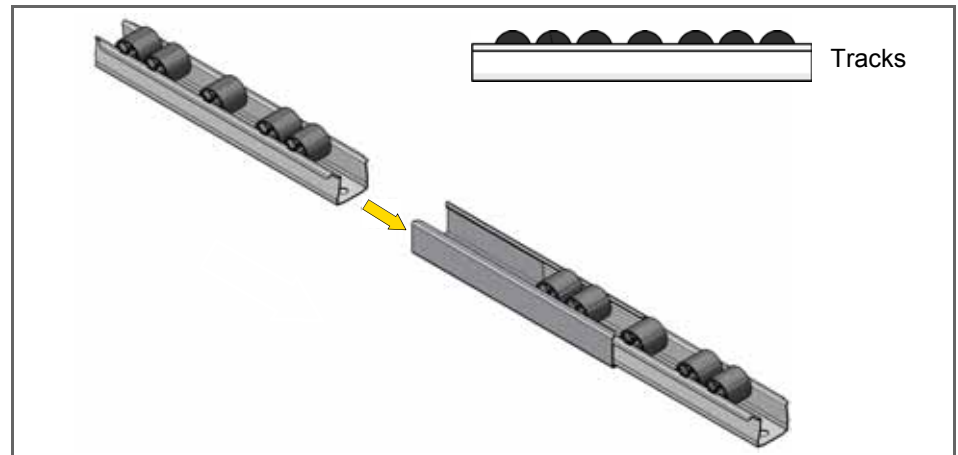
- ◆ Attachment on the intermediate angle beams (if tracks > 4,600 mm)



To align, use one clip per intermediate angle beam for each guide and for each wheel track.



◆ Splicing of the tracks



To identify the position and code of each wheel track, please refer to the bed drawing provided upon delivery (see the example below):

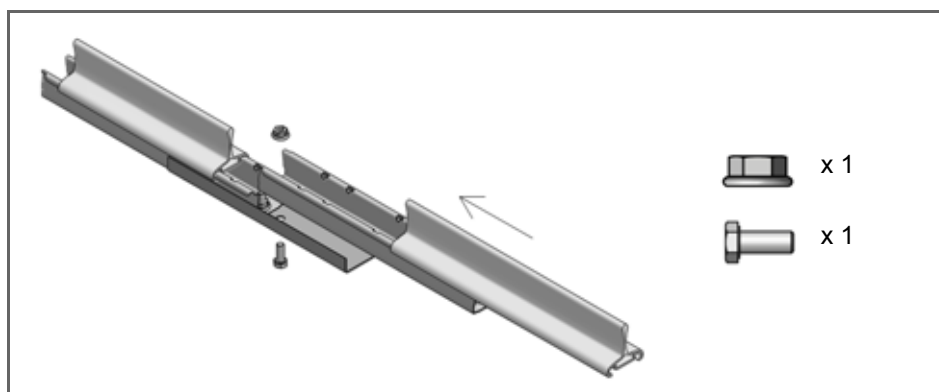
Wheel Track		
	Track code	<div> <div>Start</div> <div>R000</div> </div> <div> <div>Intermediate</div> <div>X18 X054 X18</div> </div> <div> <div>End</div> <div>-000 -1C</div> </div> <div> <div>Loading</div> <div>X=28mm</div> </div> <div> <div>Unloading</div> <div>Y=42mm</div> </div> <div> <div>Wheel color</div> <div>Z=56mm</div> </div>
	Color	Black
	Length	6060 mm
	Qty/bed	12
		<div> <div>1</div> <div>R000X18X054X18-000-1C</div> </div> <div> <div>2</div> <div>R000X18X090X18-012-1C</div> </div>

◆ Splicing of the staggered tracks

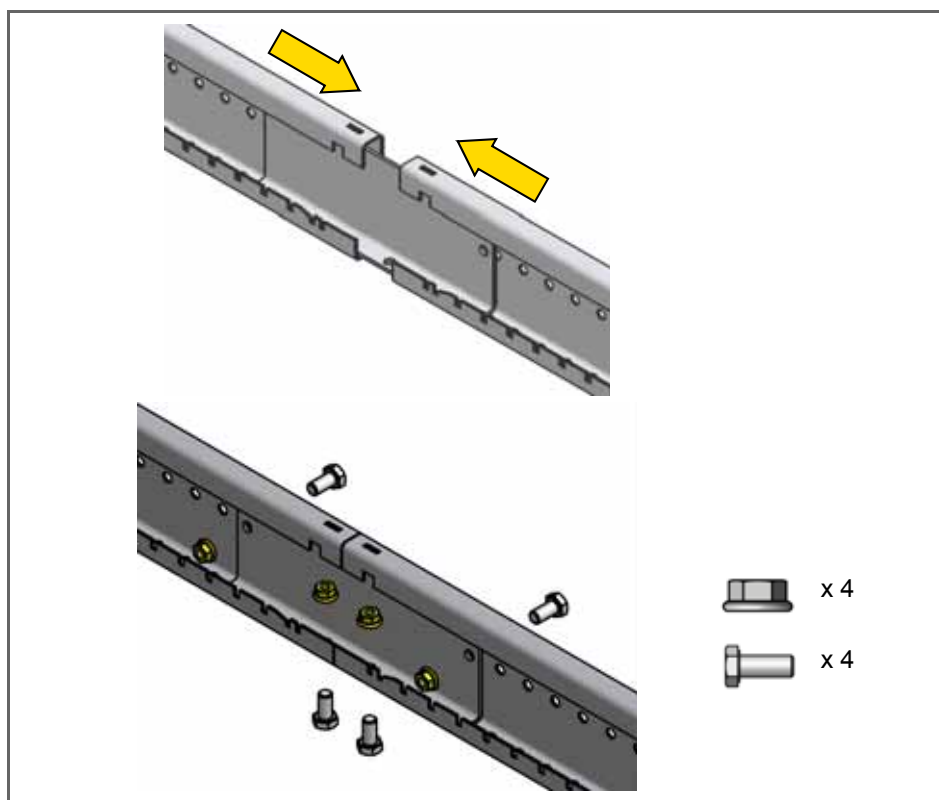
To identify the position and code of each wheel track, please refer to the bed drawing provided upon delivery (see the example below):

Wheel Track		
	Track code	<div> <div>Start</div> <div>R000</div> </div> <div> <div>Intermediate</div> <div>X18 X054 X18</div> </div> <div> <div>End</div> <div>-000 -1C</div> </div> <div> <div>Loading</div> <div>X=28mm</div> </div> <div> <div>Unloading</div> <div>Y=42mm</div> </div> <div> <div>Wheel color</div> <div>Z=56mm</div> </div>
	Color	Black
	Length	6060 mm
	Qty/bed	6
		<div> <div>1</div> <div>R000X18X054X18-000-1C</div> </div> <div> <div>2</div> <div>R000X18X090X18-012-1C</div> </div>

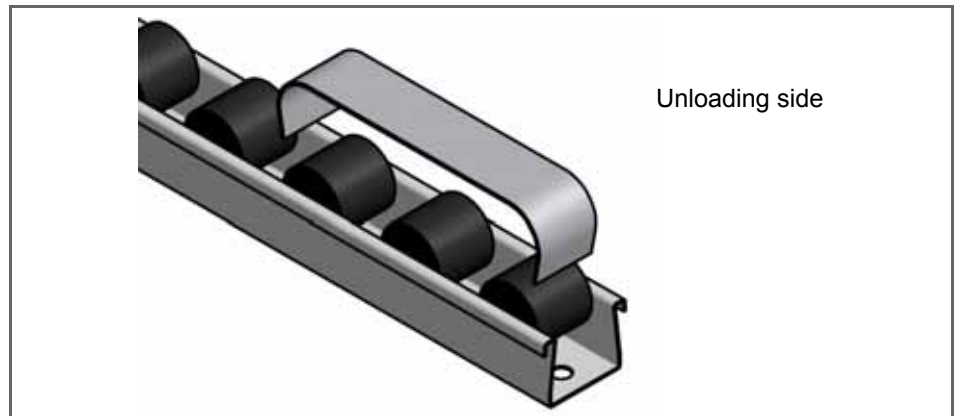
◆ Splicing of the guides



◆ Splicing of the side members (if side members > 3,584 mm)

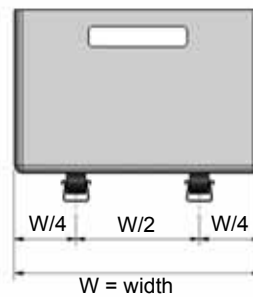


◆ Brake clip



Adjust the position and quantity in order to reduce the impact of heavy containers. However, make sure that light loads reach the unloading stop.

In the event of 2 wheel tracks per lane, obey the rule below to position the tracks.



Start-up and operation

Warnings concerning operation



Warning

Risk of injury in the event of improper handling

- ▶ Respect the loading direction according to the bed's operating mode (LIFO or FIFO)
- ▶ Do not insert containers in the bed if they do not enter it completely.
- ▶ If a container sticks out of the bed, remove it immediately.
- ▶ Do not load a container if pressure is required to insert it.



Notice

Damage in the event of improper handling

Respect the following remarks.

- ▶ Load carefully so as not to damage the bed or the products stored in it.
- ▶ Never touch the wheel tracks, the bed, or the rack with the forklift.
- ▶ Do not insert a container on the unloading side if there is not enough room in the bed.
- ▶ In the event of a malfunction or if you see any signs of damage, immediately stop the bed and set up appropriate signage.
- ▶ For any damage due to impact on a rack, beds, or wheel tracks, immediately inform the company's Maintenance Department.
- ▶ If you find nuts, screws, or other components on the floor, immediately stop all levels of the bay and of the neighbouring bays. Set up appropriate signage.
- ▶ If a container is jammed, determine what is causing the blockage and remove it. If the container appears to be defective, set it aside from the storage zone.
- ▶ If the container is blocked repeatedly at the same point, inform the company's Maintenance Department so they can take appropriate action.



Before starting up the system, all operations staff must be informed about:

- **The specific use of a dynamic storage system**
- **All the risks inherent in a dynamic storage system, such as falling loads, moving loads, cut-offs.**

Checks before the initial start-up

- ▶ When connecting the storage beds and other equipment in the warehouse, perform a risk analysis of the entire system.
- ▶ Check that the racks and beds are not visibly damaged.
- ▶ Check that there are no foreign bodies in the working area.



Before use, make sure that all the side member end caps are present. It is PROHIBITED to remove the side member end caps.

- ▶ Close down any bays with one or more missing side member end caps.
- ▶ Comply with the configuration tested when the system was received.
- ▶ Test all changes to the configuration, notably concerning the position and quantity of the brake clips.

Operation

Close down a bay if you observe any of the following:

- Suspicious noise
- A visibly worn component
- A deteriorated rack
- A defective attachment between the bed and the rack
- Wheel tracks not held parallel
- A component which has failed or which is not operating correctly

Checks before each start-up

- ▶ Check that everyone present is informed and trained in the use of the system, and that no one is in danger.
- ▶ Check that there is no visible damage to the bays or the rack.
- ▶ Check that there are no foreign bodies preventing correct operation of the system.

Loading a container



Warning

Risk of injury in the event of improper handling

- ▶ Respect the loading direction according to the bed's operating mode (LIFO or FIFO)
- ▶ Do not insert containers in the bed if they do not enter it completely.
- ▶ If a container sticks out of the bed, remove it immediately.
- ▶ Do not load a container if pressure is required to insert it.
- ▶ In the event of a blocked container, remove it and determine the cause of the blockage.

Notice



Damage in the event of improper handling

- ▶ Load carefully so as not to damage the bed or the products stored in it.
- ▶ Never touch the wheel tracks, the bed, or the rack with the fork-lift.
- ▶ Do not insert a container on the unloading side if there is not enough room in the bed.

- ▶ Check the bottom of the container to detect possible damage or foreign bodies. Damaged containers must not be used in a dynamic bed and must be removed from the storage zone.
- ▶ Make sure that the container to be loaded is one of the containers approved during verifications prior to initial start-up, see *"Checks before the initial start-up"*, page 42.
- ▶ Make sure that the loading conditions are identical to those approved during verifications prior to initial start-up, see *"Checks before the initial start-up"*, page 42.



- ▶ Do not stack containers without prior written authorisation from Interroll.



When handling containers during loading and unloading, refer to the ergonomic standards in force.

During manual loading:

- ▶ Do not place your fingers under the container
- ▶ Do not insert your hands inside the bed.
- ▶ Load the container in the axis of the lane.
- ▶ Do not let go of the load if it is not stable.
- ▶ If a container sticks out of the bed, remove it immediately.
- ▶ Do not load a container if pressure is required to insert it.
- ▶ Make sure there is enough distance to back up.

During manual unloading:

- ▶ Do not place your fingers under the container
- ▶ Do not insert your hands inside the bed.
- ▶ Make sure there is enough distance to back up.
- ▶ When unloading a container, free it from the stop by pushing it rearwards, then lift it to remove it from the bed
- ▶ Respect the loading direction according to the bed's operating mode (LIFO or FIFO)

Cleaning, maintenance, and repair

Cleaning

Notice



Damage in the event of improper cleaning

- ▶ Do not use abrasive products, pressurized jets, or products which may cause oxidation or damage the equipment.
- ▶ Clean the bed using dry cloths.

Remark in the event of maintenance and repair

Warning



Risk of injury in the event of improper intervention

- ▶ Maintenance and repairs must be carried out by qualified personnel only, in compliance with safety and other instructions.
- ▶ Wear Personal Protective Equipment (PPE).

Before any intervention, you must take into account:

- Safety instructions concerning the work area, e.g. movement in the area, welding, grinding, and the duration of the maintenance operations for cold rooms.
- Specifications particular to the company where the system is used.
- Technical data provided in the order confirmation.
- Maintenance procedures of the various products: dynamic storage beds, rack, environment, e.g. sprinklers.

Preparing an intervention

- ▶ Define a safety zone around the working area.
The safety zone covers the entire height of the bay.
- ▶ Secure the zone and set up appropriate signage, nets, etc.
- ▶ Remove everything from the lane or the bed involved in the intervention before starting.
- ▶ Make sure that the area of intervention has sufficient lighting.

Performing an intervention

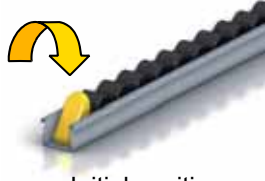
- ▶ At the end of the intervention, make a visual inspection of the repaired section to ensure that you do not leave any foreign bodies or tools which may interfere with the correct operation of the system.
- ▶ Before restarting the system, check that the bed, the rack and its environment, e.g. sprinklers are in good working order.
- ▶ During an intervention, disassemble the bed by following the assembly procedure in reverse order.
- ▶ Use only components supplied by Interroll when replacing components.
- ▶ Never straighten out a defective component.

List of maintenance and inspection operations

In order to keep the system in perfect working order, you must systematically replace any damaged components.

Maintain a log of the checks and maintenance performed on the system. Failing which, the operator shall be held responsible in the event of an incident or an accident on the system, and cannot claim any guarantee or compensation from Interroll.

Carton Wheel Flow		Date:	
Component	Tasks/Checks	Work required	Performed by
Side member end cap	Check it is positioned correctly	It must not be possible to remove the side member end cap from the side member by simply pulling on it (without using a tool). If necessary, replace it with a new Interroll end cap.	
Side member key	Check it is positioned correctly	It should not be possible to remove the key from the side member by simply pulling on it (without using a tool). If necessary, check that the side member end cap is positioned correctly.	
Screw (except for the entry guide screw)	Check the screws are tightened correctly	The recommended tightening torque is between 23 and 28 Nm. If necessary, tighten the screws to the recommended torque.	
Wheel track clip or 2-piece continuous guide clip	Check that it is present and correct	Visually check that the track clip is not broken. If necessary, replace it with a new Interroll track clip.	
	Check that the wheel track is correctly attached to the clip.	Raise the wheel track slightly by hand. It must not detach from the clip. If necessary, replace it with a new Interroll track clip.	
	Check that the track clip is correctly attached to the beams.	Raise the track clip slightly by hand. It must not detach from the beam. If necessary, check that it is present and correct. If it is compliant, put it back, see "Assembly and installation", page 12 If it is non-compliant, replace it with a new Interroll track clip.	

Carton Wheel Flow		Date:	
Component	Tasks/Checks	Work required	Performed by
Guide clip < 2,000 mm	Check that it is present and correct	Visually check that the guide clip is not broken. If necessary, replace it with a new Interroll guide clip.	
	Check that the guide is correctly attached to the guide clip.	Raise the guide slightly by hand. It must not detach from the clip. If necessary, replace it with a new Interroll guide clip.	
	Check that the guide clip is correctly attached to the beams.	Raise the guide clip slightly by hand. It must not detach from the beam. If necessary, check that it is present and correct. If it is compliant, put it back, see "Assembly and installation", page 12 If it is non-compliant, replace it with a new Interroll guide clip.	
Track	Check that it functions correctly	Check the flowability with a container approved during the start-up. If necessary, replace it with a new Interroll wheel track.	
Back stop	Check that it functions correctly	Turn by hand. It must return to its initial position.	
 <p>Initial position</p>			
Entry guide	Check that it is correctly attached to the loading beam	It must not be possible to move the guide by hand. Tighten the screw if necessary.	

If spare parts are needed, contact Interroll for a quote.

Troubleshooting

In the event of a failure

- ▶ Stop using the lane and any lane which might be damaged by the failure.
- ▶ Secure the area and set up appropriate signage.
- ▶ Only qualified maintenance personnel must repair the failure.
- ▶ Never try to hold back a container freed during an intervention.
- ▶ Before restarting the system, check that the bed, the rack and its environment, e.g. sprinklers are present and correct.
Follow the maintenance procedures of the various products: dynamic storage beds, rack, environment.

Blocked container



There may be many reasons causing a container to be blocked and preventing it from starting. This is not necessarily a defect in the system. Inserting a new container usually corrects the problem.

- ▶ If a container is blocked in the middle of a lane and/or against the rack, load another container or use a pole to free it.

Content falls to the floor

- ▶ If content has fallen to the floor, you must secure the area before taking any further action.

Troubleshooting

Failure	Cause	Correction
Blocked container	Damaged container	▶ Withdraw the container from service.
	Container non-compliant with tests performed during start-up.	▶ Withdraw the container from service.
	Foreign bodies attached to the container	▶ Remove the foreign bodies.
	Foreign bodies on the wheel track	▶ Remove the foreign bodies.
	Damaged wheel track	▶ Replace it with a new Interroll wheel track.
Container stops abruptly at an end stop	Brake clip worn	▶ Replace it with a new Interroll brake clip.
	Brake clip missing	▶ Add a brake clip.

Decommissioning and scrapping

Waste disposal

Recommendations for protecting the environment



The packaging materials require no special recycling. Insofar as possible, the packaging should be disposed of in an environmentally friendly manner.

Interroll can provide the component contents (type and quantity) upon request.

The Carton Wheel Flow contains plastic.

- For all maintenance work and when disposing of equipment, please comply with environmental standards and use appropriate disposal methods.

When disassembling for scrapping:

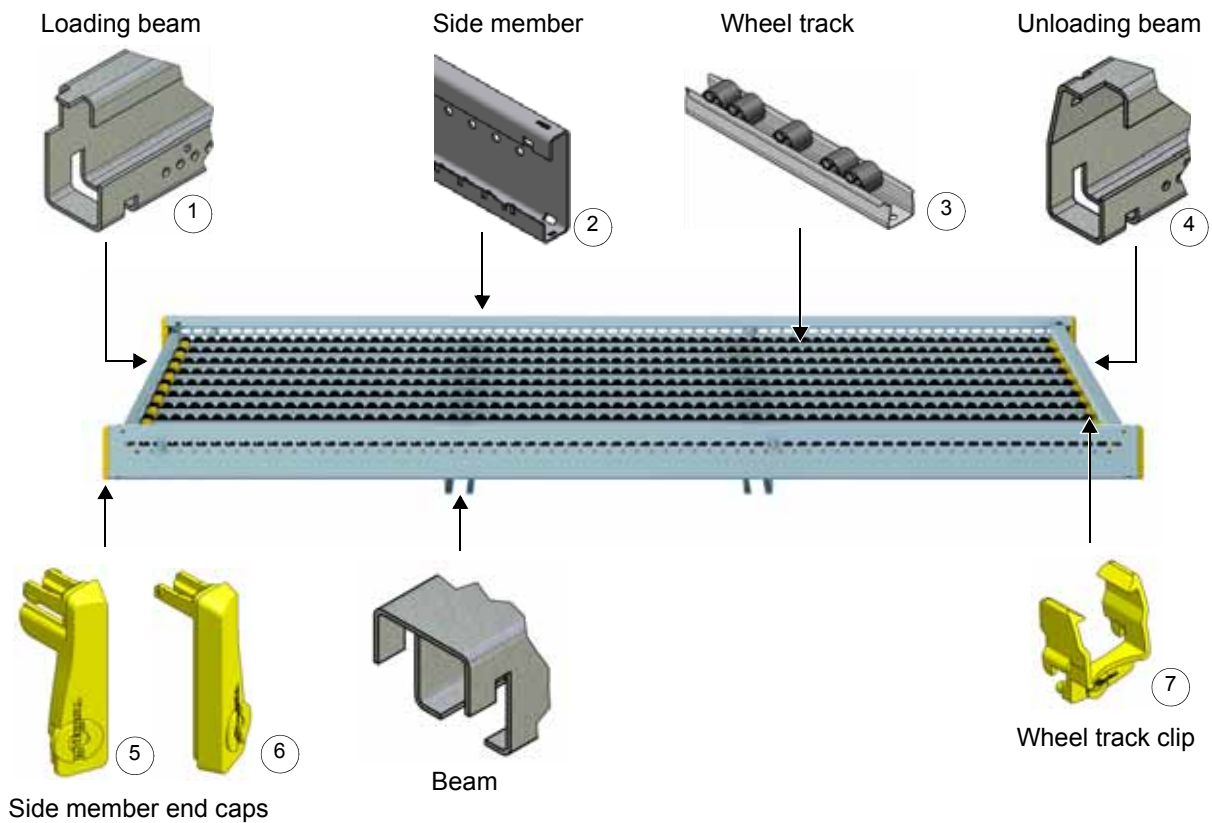
- Follow the assembly procedure in reverse order.
- Store the components in a suitable container to avoid falls or injury.

Appendix

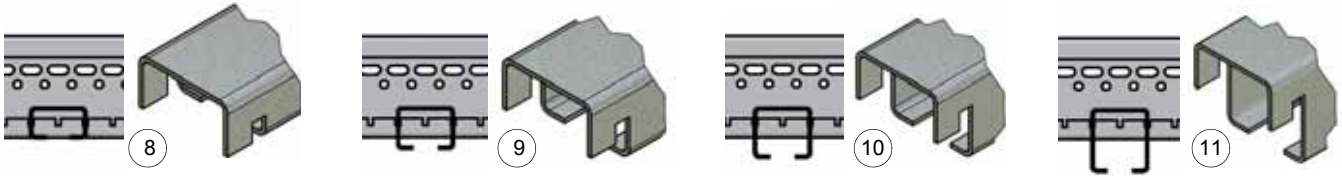
Spare parts

Spare parts illustrations

LR-UR Standard configuration

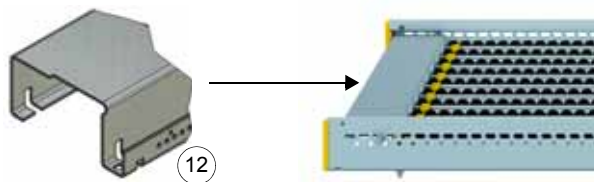


Beams

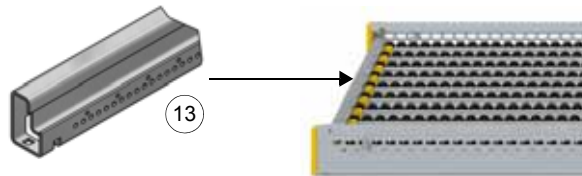


Loading

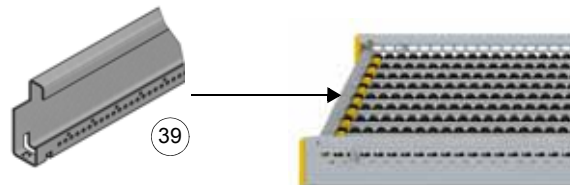
LP With loading plate



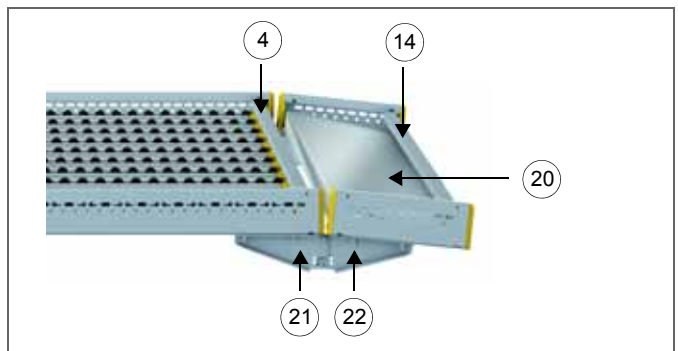
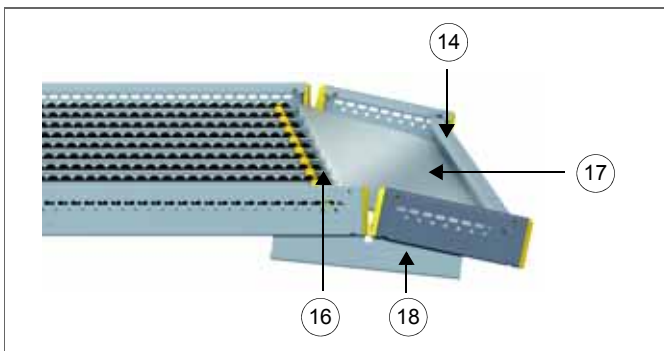
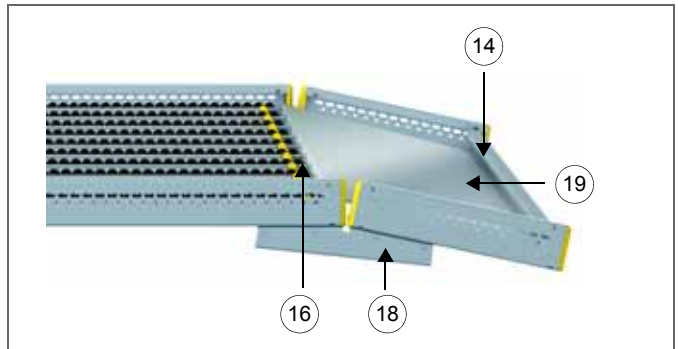
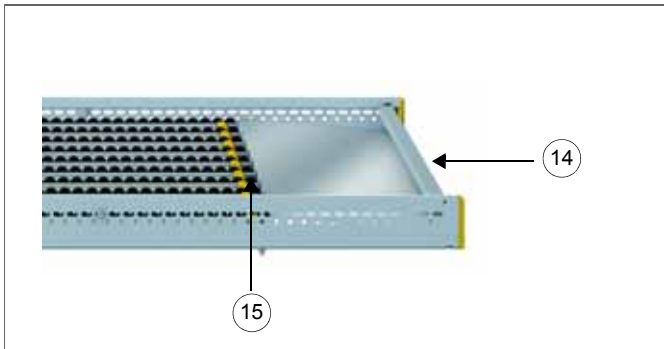
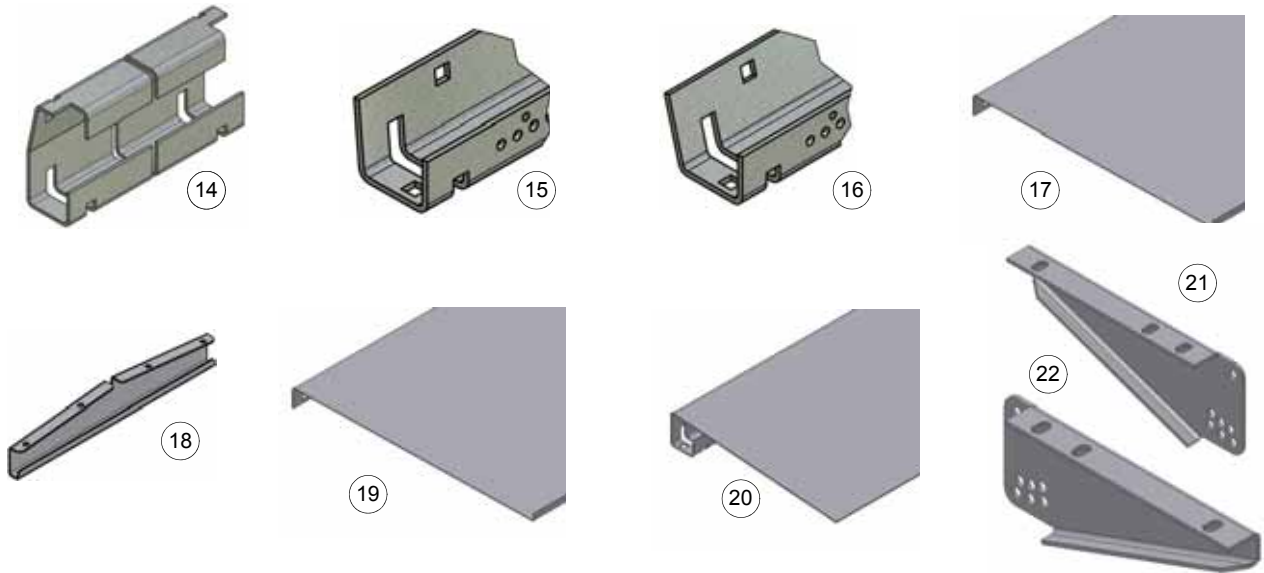
LS Loading via stacker crane



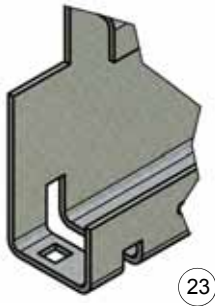
LL
LIFO rear end stop



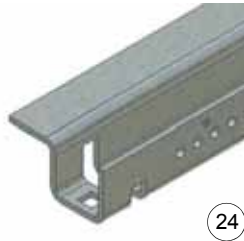
Unloading tray



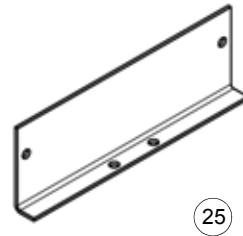
Misc. components



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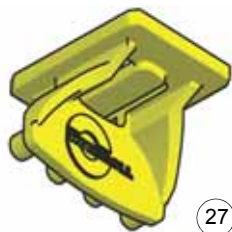
24



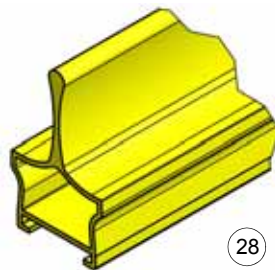
25



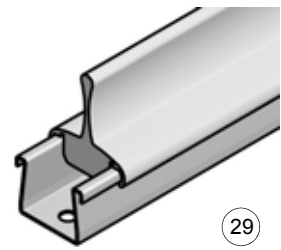
26



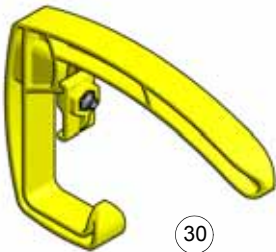
27



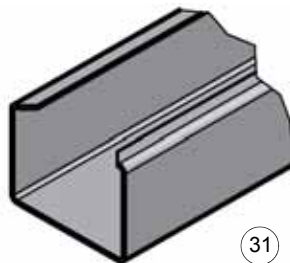
28



29



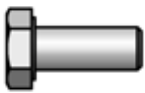
30



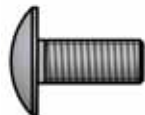
31



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34



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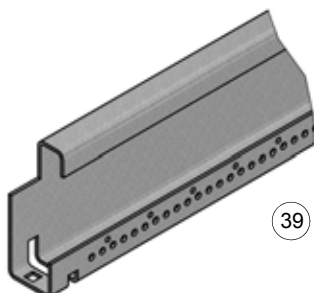
36



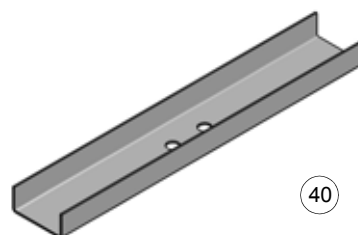
37



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Spare parts list Before placing your order, have Interroll confirm the reference numbers by providing us with the machine number indicated on the rating plate.

Recommended inventory status:

A = Keep in stock, B = Recommended stock, C = Optional stock

Machine no.				
No.	Name	Reference	Quantity	Inventory status
(1)	Loading beam	F07101050		C
(2)	Side member	F07101250		C
(3)	Wheel track	See original order		A
(4)	Unloading beam	F07101150		C
(5)	Side member end cap - left	KX745		A
(6)	Side member end cap - right	KX744		A
(7)	Track clip	KX743		A
(8)	Beam	F08011450		C
(9)	Beam	F08011451		C
(10)	Beam	F08011452		C
(11)	Beam	F07101350		C
(12)	Loading plate	F07121251		C
(13)	Stacker crane loading beam	F07101055		C
(14)	End stop	F07101153		C
(15)	5° drop-out tray beam	F07120350		C
(16)	Drop out tray beam	F07121052		C
(17)	5° and 15° drop-out tray plate - 400	F07120351		C
(18)	Drop out tray support	A080818104		C
(19)	5° and 15° drop out tray plate - 600	A080818102		C
(20)	Adj. drop out tray plate - 400 mm	F07121152		C
(21)	Adjustable drop out tray support: fixed part	A080818100		C
(22)	Adjustable drop out tray support: movable part	A080818101		C
(23)	Loading beam	F090323104		C
(24)	Intermediate angle beam	F09030450		C
(25)	Splice plate for side member	F090212100		C
(26)	Side member key	F07101054		C
(27)	Guide clip < 2,000 mm	KX750		A

Machine no.				
No.	Name	Reference	Quantity	Inventory status
(28)	Full length guide	A08041141		B
(29)	2-piece continuous guide	G090430100		B
(30)	Entry guide	G09030250		B
(31)	Splice plate for track	A09030351		C
(32)	Brake clip for 28 & 42 pitches	A09030150		C
(33)	H M8-20 screw	03VISH8x20		C
(34)	TRCC 8x16 screw, galvanized square collar = 1.5 mm	03VISTRCC8x16		C
(35)	M8 washer	03RON80000		C
(36)	M8 Flanged nut	03ECROUTEN8		C
(37)	Wing nut AC ZI M8 DIN 315	03ECROUOREILLE8		C
(38)	Self-tapping screw	03VISTOL6.3x19		C
(39)	LIFO rear end stop	F090323104		C
(40)	2-piece continuous guide splice plate	A100217100		C

These components should be replaced exclusively by qualified maintenance personnel.

This table provides an indication of requirements for most users. Each user should determine the stock levels required according to their actual usage.

